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NEW SYSTEM
OF
HUSBANDRY.

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NEW SYSTEM



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OF
HUSBANDRY.

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All which are calculated both for the Profit and Amuse-
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TO WHICH ARE ANNEXED

A few HINTS particularly and humbly offered for the
Perusal of the LEGISLATURE.

By C. VARLO, Esq.

THE FOURTH EDITION.

IN THREE VOLUMES.

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A
NEW SYSTEM
OF
HUSBANDRY.

CHAP. I.

How to set POTATOES in Drills with the
PLOW.

TAKE any poor worn-out stubble-land, which may be intended for fallow; plow it in autumn, in two furrow ridges; that is, lay two furrows back to back, through the piece you intend for potatoes.

By doing this, it will lie dry all winter; and in the beginning of March (or sooner, if the weather permit) harrow it across, and

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it

it will fill all the furrows level; after which, plow it, either across or length-wise, no matter which, provided the land be all cut and turned up; then again harrow it well and fine; and just before you intend to plant potatoes, plow it again into two furrow-ridges, lying back to back, so that they must close at the top, but not so as to let any mold fall into the opposite furrow.

Being thus laid in ridges, and the furrows all open, in every furrow set a row of potatoes, each about the length of a man's foot asunder; then take the dunging baskets, and drop a piece of dung, about the size of your fist, upon each potatoe; by this method, a little dung will go a great way, and a few hands will set a great deal in a day.

When thus set and dunged, go with the plow, and split the ridge in two; so that what was the furrow, will now be the ridge, and the ridge will be over the potatoes: so that they will come up in rows through the middle thereof.

In

OF HUSBANDRY. 3

In summer, you may go with the plow up and down every drill, to cut the weeds, and earth up the potatoes.

By this method, it may be well termed a potatoe-fallow; as it may be plowed always when the weeds grow.

In taking them up, go with a plow, and turn the whole drill over; by which means all, or most of the potatoes will appear above ground, and be easily gathered; but if a small part of them remain ungathered, they will all be found by harrowing, or the next plowing.

This is a very expeditious way, both in setting and taking up; and it ought to be every man's study, to work his land with as little expence as possible.

The next easy way, to set potatoes with the plow, is, in grass-land, viz.

Harrow the sod well, both length and crosswise, to scratch, wound, and mangle the grass roots, in order to set them a-rotting; which they will do speedily, when turned up.

Then begin, and plow a furrow eight inches broad; in this, set a row of potatoes, a foot-length asunder; and on every potatoe drop a lump of dung, about the bigness of a man's fist; then plow two furrows, and in the third set another row; so that there will be a furrow between every two rows or drills, through the piece. When it is all set, harrow it well; but take care not to turn up or disorder the sods.

When the potatoes are come up a little above ground, go with a plow up and down every drill, and lay the loose mold, with the harrow raised, to the stem of the potatoes; but be careful not to disturb the sod. When they are taking up, turn the drill or furrow with the plow; by which means they are easily gathered.

The

OF HUSBANDRY. 5

The third method of planting potatoes, is with spades ; as they do in Cheshire.

They dig all the ground, and bury the dung about four inches deep ; as if they were trenching in a garden ; after which they go with setting sticks, make a hole, and drop the potatoe in ; then they rake the ground, to fill the holes.

They are dug up with spades also ; but this is expensive, in comparison of setting with the plow.

However, they take care not to bury the dung too deep ; as also not to throw up any bad earth, to spoil the land ; which is too often the case in Ireland.

C H A P. II.

Remarks on setting POTATOES with the
Plow.

ME thinks, I see my brother farmer turn hither in great hurry, to see my reason for advising him to set his potatoes with the plow; and not to keep him long in suspense, I plainly tell him, that it saves both men, money, and dung, besides improving his land. These are considerations well worth his attention.

First, it saves men; as one man and two horses, and five or six boys, will set as many potatoes in a day with the plow, as seventy or eighty men could set with spades.

Secondly, it saves dung; as one load will go as far as four.

Thirdly,

OF HUSBANDRY. 7

Thirdly, none of the dung is lost by being buried in the trenches; which is evidently the case when trenched in the old Irish method; as a lump is dropped upon every potatoe.

Fourthly, potatoes, got thus, are nearly clear gains, as they may be sown upon land that is intended for summer-fallow, and such land will absolutely receive more benefit from this potatoe-fallow, than if nothing had grown; for what with hoeing with the plow, and what with the tops smothering the weeds, &c. the ground is made clean and mellow, and in fine order for a wheat-crop at Michaelmas.

And there can be no disappointment, as potatoes can be plowed up in a speedy manner.

All these reasons, I hope, will prevail upon the Irish farmers, or people in general,

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general, to follow this cheap and easy method; as nothing concerns a farmer so much, as working his land with the greatest dispatch, and the least expence that reason can devise.

As I have travelled between England and Ireland, for near twenty years past, I have had an opportunity to remark, how the different markets ruled in the two kingdoms; and I always found that, in the cities of York, Lincoln, and in large towns, such as Leeds, Wakefield, Doncaster, Sheffield, and in short, all over England, where it is customary to set the potatoes with the plow, they always sell lower than in Ireland.

This fact is incontestable; although it is well known, that, in these places, land is higher, and so is labour of more value.

This shews, they must have a cheaper and easier way of coming at them, or they could not be afforded at a lower rate.

OF HUSBANDRY. 9

rate. Further, the method of setting with the plow is so easy, that a man may teach, in an hour, as many people as could look at him.

The Expence and Profit of an acre of POTATOES, raised by the Plow, as directed under that Article.

	l.	s.	d.
To twenty quarters of potatoes, at 9s. per, or forty stone	-	9	0 0
		9	0 0

To three plowings, at 2s. 6d. each			
if with one man and two horses	0	7	6
To two harrowings	-	0	2 6
To one quarter of potatoes for seed,			
at 9s. per	-	0	9 0
To six loads of dung, at 2s. per	0	12	0
To six boys or girls, each at 4d.			
per day	-	0	2 0
		1	12 6
		Brought	

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Brought over	-	-	1	12	6
To two men, to see they be rightly set, and to help to lay the dung	0	1	8		
To three times hoeing with the plow	-	-	0	6	0
To plowing up	-	-	0	2	6
To eight boys or girls, at 4d. each	0	2	8		
To carriage home	-	-	0	2	0
To land-rent	-	-	0	15	0
<hr/>					
Total expence	3	2	4		
<hr/>					
Clear profit	5	17	8		

CHAP. III.

Remarks and Illustrations on the foregoing
TABLE ON POTATOES, set with the Plow.

IN order to encourage the farmer to fall into this valuable piece of husbandry, I have allowed him, in the foregoing table, to be well paid for all his trouble; and yet

OF HUSBANDRY. 11

yet he sees the profit amounts to upwards of five pounds seventeen shillings, an acre.

Were I to be very minute, the profit would be much more; I have very often known from fifteen to twenty pounds made on an acre.

If I was to do strict justice to this valuable crop, it should not be charged, either with rent, plowing, or dung; as it is past contradiction, that the land, after this, would be better for a crop of wheat, the succeeding year, than if it had been fallowed in the common way.

It is also to be observed, that I have charged the potatoes only at nine shillings a quarter, which often fell for much more.

These are all plain and impartial reasons; and I hope will encourage the farmer to pursue this valuable method.

There

There are a great many parts of England, that follow this method ; therefore such may overlook this chapter, and leave it for those that know nothing of it ; which are a great many parts both of England, Ireland, Scotland, and Wales ; so excuse me, if, in other cases, I mention sometimes what is known to some farmers ; as it may be strange to others.

C H A P. IV.

On setting POTATOES, as in Ireland, on Ridges, by trenching.

THE Irish method of setting potatoes, is, in some cases, very useful, and the cheapest of all others, except the plow ; and would be much more valuable in all cases, if they were cautious not to make the trenches too deep, to bury the dung, and throw up bad earth,

It

OF HUSBANDRY. 13

It is a very easy method, and quick too; because not above one fourth of the ground is dug; and few farmers have fields or closes, but what have waste corners, where the plow cannot come; as also backs of ditches, &c. which, if he lays on a good coat of manure, he may set potatoes in; and when they are dug up, it will make good compost for his land.

It is also a good method to break up tough, stubborn, rooty, or rocky land; because this is a quick method of working it; and the crop will meliorate it to that degree, that it may be plowed the year following with ease; and as to the executing of this method, nothing is more easily learned, viz.

When you have fixed upon a piece of land for this purpose, you must lay out your ridges in breadth according to the depth of your soil; that is, if the soil be shallow, make your ridges about four feet broad,

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broad, and the trench about two feet and a half wide.

This is in order that you may raise earth enough, to cover the potatoes, without entering upon a dead poor soil.

But if your under-stratum be good, you make the trenches deep and narrow ; which will save land.

Sometimes it happens, that a rich earth, or even a kind of manure, lies within the reach of this trenching ; when this happens, it is a treasure.

Cover your potatoes about four solid inches thick ; being thus learned, and determined as to the depth and breadth of the ridge, you must stretch a line, and cut it out ; then spread your manure straight and even on the ridge, leaving the breadth of the trench without any.

After this, lay on your potatoes at about nine inches from each other ; then dig the trench,

OF HUSBANDRY. 15

trench, and turn the first sod-grass downwards, close to the edge of the ridge; and what the sod does not meet to cover, finish covering it with the second spit; but leave the shovellings at the bottom of the trench, till the potatoes are ready to peep above the ground; then shovel up the loose earth, and cover all the ridge thinly over.

This will check the growth of the top, and cause the potatoes to spread under ground; this is a better way than to finish the ridge all at the first setting; as some will do.

If you have much old grass, or rushes, &c. on the ground, or that the sod is tough, and likely to take much time to rot; in this case, it is better to trench the ground in December or January, and in March set the potatoes; make holes with the planting-machine; but the pegs must be thicker, in order to make the holes wide enough to let the set to the bottom; or, for want of this machine, you may take a setting stick,
like

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like the shaft of a spade, and fix cross-ways, a strong peg about four inches from the bottom; this is to set your foot on, in order to sink the setting-stick more easily.

Make the holes about nine inches asunder; in them drop the potatoes, but no deeper than just to fall between the two fods; for they love to spread along the firm earth; rake or harrow, to fill the holes; then shovel the trenches, and finish the ridge.

Though rotten dung is, doubtless, best, yet, if the ground be trenched early enough, long dung will make a good shift, and may be better used in this than any other crop, as it will have time to rot, and will keep the two fods open, so that the potatoes may have room to run and spread between them.

In the county of Leitrim, there is a great deal of wet rushy land, worth little; and I have seen very good potatoes in it, from no other

other manure than cutting the rushes, and laying on the ridge, and making it no broader than the furrow or trench; so that the fods meet. They trench it early, and make the ridges only three feet wide.

However, if they doubt the land will not bring a good crop thus, they may be sure of a good crop, if they only give it a thin covering of either lime, marl, or lime stone-gravel, along with the rushes: but the sooner this manure is laid on, (in order to grow to the fod, and rot), the better, and the greater certainty of a crop. Such land generally gives a good crop of beer or wheat, after the potatoes are dug out.

CHAP. V.

On different Sorts of POTATOES.

THERE are various sorts of potatoes, more perhaps than I am acquainted with; however, the following is a list of the various sorts which I have cultivated, myself.

First, white rusiting; this is a round potatoe, with a rough skin.

Secondly, red rusiting; this is a red round potatoe, with a rough skin.

Thirdly, the large, Irish, white, smooth potatoe.

Fourthly, the large, round, red potatoe.

Fifthly, the culgee.

Sixthly, the early-wise potatoe.

Seventhly,

Seventhly, the white kidney-potatoe.

Eighthly, the Jerusalem-potatoe.

Ninthly, the bull's eye-potatoe.

The bull's eye is a large red potatoe, which will grow and yield a plentiful crop on poor ground; but it is a very bad-eating potatoe; it tastes not much unlike a yam.

As they produce a plentiful crop, some gentlemen sow them in Ireland, and particularly near Waterford, in the county of Kilkenny, where they feed and slaughter many swine for exportation.

The Jerusalem-potatoe is long, and full of eyes, and is of a great produce; each eye makes a set; as indeed so they do in every other potatoe; for the Irish always cut them in sets; which is a good way, though not generally practised in England.

The culgee is a very sweet-eating potatoe ; one side is generally red ; in their growing, they do not spread and grow from string, like another potatoe, but stick to the bottom of the stalk like a bunch of grapes, and rise to the surface ; infomuch that often the red side will be above ground.

I had a fine crop of them, last year ; they are very fond of a well-tilled soil ; therefore the drill-method of setting them with the plow, in broken land, suits them best.

The wise potatoe is of an early kind ; they produce a small top, but no blossom, and the top withers early ; they do not grow very large, are of a light-red cast, full of eyes ; they are of a great increase, but a great many of them small ; they are very useful for an early crop ; as they are dry, and ready for use two months before others ; but it is not a good-keeping potatoe.

The

OF HUSBANDRY. 21

The large red Irish potatoe is of a good kind, and particularly on strong cold land, where it thrives best; it grows large, and produces a good plentiful crop.

As the poor Irish eat potatoes instead of bread, these are the best of all others for that use; they will tell you, that they will lie longer than any others on the stomach; so consequently are of a sound firm texture; their colour is of a deep red, and of a round shape; they have a gross strong stalk or top.

The white rusiting is a very pleasant-eating potatoe; but I do not think them good yielders: neither will they thrive well, without rich well-tilled land.

The red rusiting is of a hardy sort, and will grow almost on any sort of land; but they do not produce many at a root; neither are they large; so consequently are bad yielders, and not a desirable crop, where other seed can be got.

The toad-back is nearly a-kin to the large Irish potatoe, only not so large; the skin is almost black, and rough like a russeting; this is a sound, dry, firm, good-eating potatoe; it is fond of good fresh land, and agrees very well with the Irish method of setting on lay-land, as directed in the chapter that treats thereon.

The kidney (or by some called Spanish) potatoe is of an oblong shape, a white colour, with a yellowish cast; it is a sweet good-eating potatoe; but not so dry, or mealy, as some others; therefore not so proper to be used in the place of bread, (as is the case in Ireland); but it is very good to be chopped up, and used as sauce, or roots, to meat; it is an exceeding good yielder, and by nature seeks its food deep; and therefore requires a good covering with mold, when set; it will thrive well on a strong deep soil; but requires to be well tilled.

C H A P. VI.

To improve GROUND, destroy WHINS and BROOM, and, at the same Time, raise a valuable Crop of POTATOES.

AS much land as there lies, in a manner, waste, through his Majesty's dominions, by being over-run with whins, I have not as yet seen any method found out to eradicate them, but by strength of men and money; however, what is to follow, may shew the great treasure that may be made of them, by those, who, perhaps, formerly thought them a nuisance, and, with great expence, have strove to be quit of them.

Some burn the tops on the ground, and stub up the roots by men, at great expence; others (who think themselves, perhaps, at the height of improvement in this matter) tear them up with strong plows and horses. But, if they considered what a vast body

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of manure they send into the clouds, and destroy, they certainly would be angry with themselves for so doing.

Particularly, when they once try the valuable method of setting potatoes on them; they will then see, that the sap they contain is a very rich manure, which, when, smothered, quickly rots: it will enrich the ground past imagination, and, at the same time, raise a valuable crop, with very little expence.

The second crop (for it will bring two) will not be much inferior to the first; and it may be got with very small trouble or expence.

After the second crop of potatoes is off, if the ground be strong, it will bring a good crop of wheat or beans; or if light and sandy, barley or rye.

The first thing that is to be done, is, to cut a way through the whins, where the
trenches

trenches will fall, then stretch a line to the breadth of the ridge you fix upon; if your ground be a deep good soil, the ridge may be broad, and the trench so deep; as to afford earth enough to cover the whins four inches thick.

The most general breadth of these beds or ridges, is nine feet; and the trench or furrow, two feet; so that two spits deep and a shovelling, will give the covering required.

Tread down the whins, before you lay on the earth, so as to make them fall close one way; if they be not very strong stalks, treading and the earth will keep them down; but if the stalks be too gross, give them a nick close to the root. All the whins you cut up, where the furrow falls, you must lay on the ridge, in the most vacant places you can find; as there are few closes so full of whins, but have some bare spots; therefore what is cut from the furrow will make up
the

the deficiency of manure ; as they will now act in that station.

But it matters not how strong or rank the whins are on the ground : if they be six feet high in one continued bed, the better, and the more manure it will afford your land.

There is no method yet found out for destroying whins, equal to this ; as to fallow, they often grow after, in spots ; but they are effectually smothered, when properly done thus.

The longer the ground is trenched, before the potatoes are set, the better : that the whins may have time to rot and ferment with the earth, they should be trenched under about Michaelmas, and the potatoes set in April following.

Holes must be made, nine inches asunder, with a setting-stick, to let the seed down to the whins. In order to make the stick sink the easier, fix a pin across, six inches from

OF HUSBANDRY. 27

from the bottom, to set the foot upon, in the nature of a spade.

And as you make the holes, any children will follow, and drop in the seed.

After they are set, rake the land over, to fill the holes.

When the potatoes are just beginning to peep above ground, shovel the furrows, and throw the loose earth over the bed; which will give it a thin covering; all the loose earth that the spade leaves, in trenching, must be reserved at the bottom of the furrow, on purpose for this use.

When you dig out the potatoes, gather them as clean as you can; there will still be sufficient seed left in the ground for a second crop; do not raise any of the whin-stalks; but leave them in the ground.

When the potatoes are up, shovel the trenches, and leave the ridge smooth covered up all winter.

If

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If there be not a very hard frost, you will get a second crop, without any more expence; but if the frost be so hard, as to rot the sets in the ground, all you have to do, is, to set them over again in the spring; and after they are set, rake, and fill the holes, as you did the first year.

It is by far the best, to take two crops; because the second is got for little or no expence; and it gives a sufficient time for the whins to rot, and the earth to meliorate.

The stalks and roots of the whins will be so rotten, as not to resist the plow; therefore you may plow up the second crop of potatoes, and till the ground, either for wheat or barley; which cannot fail of a crop, after such a rich dressing.

A TABLE

A T A B L E

Of the Expence and profit of an Acre of
whinny Land, fet with POTATOES.

To digging 160 perch or fall, at 2d.	
per - - - - -	1 6 8
To seed and setting - - -	0 10 0
To shovelling or finishing - -	0 2 0
	<hr/>
Total expence	1 18 8

To 100 bushels of potatoes, at 2s.	
each - - - - -	10 0 0
	<hr/>
Clear profit	8 1 4

The above is just as it stands with my experiment. I am sensible, that if the land be tolerably good, and a full crop of whins, an acre will produce double the quantity; but my land was a very bad sand.

I have not mentioned any thing for taking up the potatoes; as I made no charge in my

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my experiment; but the second crop pays well for that; as it will have as many potatoes in bulk, though not so large; and there is no expence attending it, but the gathering of the two crops.

I am so unfortunate, as not to have any whinny land in my possession at present; as all I had is reclaimed; but I assure my reader, I will take the first whin-farm I can meet with, if it suit my situation.

Broom is managed, in every degree, the same way, and will not fail to enrich the land by its fertilizing quality; but, however, it is to be observed, that it generally grows on lighter land than whins; therefore, if the farmer's situation for clay or marl will allow, he must give it a coat of either the one or the other, which he is master of, before he trenches the ground; that is, he must cut the broom, and lay it on the ridges, and then spread the marl upon it; after this, trench, and cover it with earth, as directed for whins.

C H A P.

CHAP. VII.

The Management and Use of VETCHES.

VETCHES are a very useful good crop, and particularly for winter or spring-feeding for sheep, or indeed other cattle; and what adds still to their value, is, that they want no dung or manure.

They may be sown, and will grow upon land that would lie in an useless state all winter; and what is more, they add to the fertilizing of such land; neither does a farmer pay one penny more rent for this crop, than he would for the stubble standing on the said land.

The chief use of vetches is, to supply the farmer with winter-feeding on his stubble-lands, that would otherwise be waste, from the time the crop is reaped, which is about September, to March or April following: in this case, they are very valuable; as what
benefits,

benefits, either the land, or the farmer gets by them, is clear gain.

But as useful as vetches are in this case, they are too inconsiderable a crop, to stand all summer, and take the year's rent upon them; except in very poor, sandy, or gravelly land, which is generally of a low rent.

The better the land is, which they are sown on, for the winter-feeding, doubtless, the better herbage they will make; also, the sooner they are sown in autumn, (so as to have as much benefit of the declining summer-sun as possible) the better and stronger your herbage will be; therefore the more cattle it will support; and if the land be a rich, deep, strong loam or clay, it will produce good herbage; though it is not proper for seed; because the richness of the soil would force it all into straw, but little corn.

The

OF HUSBANDRY. 33

The method of those that would sow vetches upon their waste stubble-land, for winter-feeding, must be this :

Take any sort of land, that has been under rape, cole-feed, turnips, or any sort of corn; and, as soon as the crop is reaped and off, plow the stubble under; begin in the middle of the ridge, and raise it as high as possible with the plow, (by gathering or taking it up) in order that it may lie as dry as possible all winter; which will add both to the goodness of the crop, and the cleanness of the cattles feeding.

This done, sow your vetches, at the rate of ten stone to the English acre; then harrow them in; after this, water-furrow and gripe-cross your ridges, in the lowest places of the land, leading to the side-drains; in order to give a ready passage for the winter's water, when it falls.

If they be sown at the latter end of August, or the beginning of September, you may

turn your sheep in, about the middle of December.

Eat them all winter ; and, in spring, the land will be in fine order for oats or barley.

Some chuse to preserve their vetches till spring, to feed early lambs or weathers on, which is very profitable : others will eat them all the month of May, and then give the land a couple of plowings, and sow it with turnips or rape, at Midsummer ; this is also a good way.

Others, again, will fallow all summer, after the vetches are eat off ; which will greatly enrich the land ; and then sow wheat on it in autumn.

If you intend your vetches for feed, sow them in February, at the rate of six stone to the acre ; and harvest them as peas. But if they be intended to plow in, for dung, (which is the worst way, as it is better to make dung by eating them on the ground)

sow

OF HUSBANDRY: 35

sow them in March, at eight stone to the acre; and plow them in, when full of blossom, as directed for buck-wheat.

If you intend this crop for fodder, by the way of hay, they must be mown before they are ripe; that is, when the straw is full of juices and sap.

By taking them thus green, when the straw is full of sap or rich substances, the grain does not shake out; and the horses eat straw and corn all together; which is excellent fodder.

In this case, the hay must be made by the same method as any other hay; only, by being cut in this state, the straw will be particularly full of sap; therefore you must be careful that it neither rot, nor mould.

The quality of vetches is such, that they will grow almost on any sort of land; if they stand for seed, poor, gravelly, or light,

D 2

sandy

sandy land suits them best ; for indeed they are mostly sown where nothing else will grow ; and I think they exceed any other grass or crop whatever, except turnips, for winter-feeding ; as they suit our climates, being a native of these kingdoms, and a plant that keeps green all winter.

Indeed, they are of such a juicy herbagy nature, that though the seed ripens, dries, and sheds, yet the stalk or straw will be a green herbage, and full of juices, after the seed has deserted it.

C H A P. VIII.

Explanation and Nature of different Sorts of Pulse, such as VETCH, TARE, LENTILS, &c.

THE following multiplicity of names, confusedly made use of by different authors, to convey the meaning of one plant, may well puzzle or confound the ideas of a farmer,

mer, and send him in search after plants, corn, or grain, of which perhaps he himself may be already possessed.

However, it cannot be expected he should have a sufficient library of books, always at hand, to clear up references. It is enough to tell him, that, though the many following names are made use of in different parts of the two kingdoms, yet vetch is a name that suits our English tongue best, and what may be understood by every one that understands the language: to this name is added fitch, fetch, thetch, thetches, fitches, chick and checkes: and these absolutely mean one and the same thing; some make the word of the singular, and others the plural number.

Most people are inclined to believe the real name of this pulse to be vetch; but this cannot be, as vetch is the Latin word for tare; and though the tare is of the

pulse-kind, yet it hardly bears a resemblance to the vetch in question.

Besides, the tare is considered, amongst the judicious farmers, as a weed; and with great reason too; for it is as destructive to corn as any weed whatever; being a weak, climbing, heavy-topped, feathery plant, which pulls the corn down, and rots it.

The seed also, when once it gets a footing, is very hard to get clear of, as it is of a small, round shape, and blackish colour. It is likewise spoken of in scripture as a weed.

Notwithstanding all this, I, with regret, see it largely treated on by some authors, as a valuable crop; however, I know the ill consequences of it so well, by woeful experience, that I shall not bestow a single line about it, except to advise the farmer, that
already

already has it, to clear his land of it, as fast as possible.

There are two sorts of vetches, namely, the large and the small: the large is of a grey colour, and is most proper to sow, when the crop is intended to stand for seed.

The small sort is a small black grain, and a hardy plant, and not so gross; therefore not so apt to lodge, and rot by the severity of the winter, as the former.

The vetch bears a blue, or rather purple blossom, much like a grey field-pea; the pod of much the same likeness, but small; the stalk has a resemblance also, but will not grow to near the length or grossness, and is clad with a small narrow-feathered leaf.

The lentil (but corruptly called, by some, till) is a species of pulse, and one that deserves the farmer's attention. It is nearly

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of the same nature as the vetch ; therefore must have the same management ; but will afford to be sown something later in the spring ; as it is rather of an earlier kind.

The stalk of the lentil is more taper than that of vetches ; so consequently will stand better without a support.

For this reason, the farmers may sow it with success amongst their oats ; as it is able to support itself, without pulling the oats down.

Again, it is a great bearer, and adds much to the mealy part of the oat ; and consequently has more strength of food for the horse ; and the straw, being mixed with the oat-straw, makes excellent fodder.

The pod that holds the seed, is somewhat like that of a pea, but broader in proportion, and very thin, as the two sides fall close together round the seed.

The

OF HUSBANDRY. 41

The seed is grey, and of a round flattish shape; the leaves grow in pairs, opposite each other, are long, small, and pointed, of a palish green, and a little downy at the under side.

The corn is very good for pigeons, or fowls of any sort: it is also made use of for the same purposes as the grey pea, or vetch.

One thing is to be said of the lentil, that it will grow on any poor, light gravel, or sandy land, perhaps better than any other grain or sort of pulse; but though this be its perfection, yet, doubtless, the better the land, the stouter the crop; provided it be of a warm sandy nature. Indeed, any grain, of the pulse kind, is fond of such land; but when it is richer than common, the seed must be sown thinner in proportion, and particularly when the crop is intended to stand for seed.

C H A P.

C H A P. IX.

On the different Management of CLOVER,
through all its Variations.

CLOVER suits the climate of England and Ireland, better than most other grasses, and is a very beneficial crop, either for grazing, or meadow; besides, it is a great improver of land, having a strong fibrous root, which quickly incorporates with the earth; and, when plowed up, or disturbed by tillage, soon rots, and becomes a very rich manure.

This, together with the several rich crops it produces, makes it of more value than any other artificial grass.

The way to make the most of it, I take to be this, viz.

Sow it with a spring-crop; that is, after the corn is sown and harrowed, sow the
clover-

clover-seed, at the rate of ten pounds to an English acre.

When sown, either bush-harrow, or roll it; but the latter is the best.

When the corn is reaped, eat the clover for about a month; though there are many who object against this method; (but my reasons for it may be seen in the ensuing chapter on clover) then lay it up. It will be well grown by April; at which time you may turn in the ewes and lambs.

It is an excellent thing to create milk, for feeding lambs with; also good feeding for any sort of cattle; but be watchful to keep your horned cattle walking or stirring about; or they will be very apt to hove and burst, as it is a very swelling food; and particularly if the weather be wet; for when the cattle are first turned in, they eat greedily, not taking time to chew it.

Therefore,

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Therefore, it is best, only to suffer them to be in about ten minutes at a time, the first day, twenty the next, and so on : but it is best to turn them in with a full belly of hay, or some dry meat ; which will abate their greedy appetite, and help to dry up the watery particles.

One great use or advantage in clover, is, its early spring ; for it comes in at least a month before natural grass ; and a month's grass, early in the spring, is worth two at any other time of the year.

This is a consideration a farmer ought to bear in mind ; and that for several reasons, viz.

First, for feeding early lambs.

Secondly, to supply the place of hay, which, at this time of the year, is generally scarce and dear,

Thirdly, it is a great strengthener to young cattle, such as calves and foals ;
for

for it first purges, and then puts them in health and vigour, to enter with a good constitution into the natural grafs-pasture. It is always observed, that, when they go weak and poor into the summer grafs, the best part of the summer is spent (in which time they should grow in bone) before they recover their flesh.

Fourthly, it springs the in-calving cows to milk; and a farmer ought to bear in mind, that a fortnight's good feeding, before a cow calves, is worth a month after; as it flushes her to milk, by opening her milk-veins, stretching her udder, teats, and milk-vessels; and it strengthens and feeds the calf within, and herself to undergo the painful task of calving.

A cow with health and strength at calving, is worth one and a half that is poor, for milk, in summer.

After this most valuable grafs has performed all these good offices, by its early
spring,

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spring, lay it up for meadow, about the first of May; and it will be ready to mow, in a month, or five weeks after.

By good management, it will produce three crops in one year; besides the after-grass, or winter-herbage, which is almost of as much value as the rest.

The different stages, for a crop of clover, are as follows, viz.

Suppose the seed to be sown amongst corn, in the beginning of April: this year, the rent of the land is paid by the corn-crop; therefore the clover has no charge of rent upon it, till May following; however, it is of great use in this year, for winter-feeding.

After the corn is reaped, the stubbles must be kept free from cattle, till the clover get to be a good herbage; which will be about the first of November; then turn light cattle in: eat it till the first of December,

or

OF HUSBANDRY. 47

or till you see that they have cropped off all the first shoots.

Then take them out, and lay it up till the first of April; at which time it will be a good herbage.

Therefore, if your grafs be scarce, and you chuse to eat the clover, you may turn in cattle for a month; and the first of May lay it up for a meadow-crop:

If a wet summer follows, and the ground be good, it will be ready to cut by the tenth of June, for hay: the next crop will produce seed, or, if you chuse, another crop of hay.

The time to cut the second crop for hay, is, about the middle of September; or when the flowers are all full blown, and some of the most forward begin to fade.

But if you would save the seed, give it time enough to ripen; as there is no fear
of

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of its shedding; it is so well inclosed with a very sticking, tough, wirey pod; therefore defer cutting it till very ripe; as also make it very dry and rash, when cut; or it will not part from the straw or pod, by threshing, without more labour than it is worth.

By taking out the seed, the straw will be threshed very short and mushy; however, it will be good fodder, though not near equal to the crop managed for hay in its proper season.

He is a good workman, that can thresh out a peck of clean seed in a day; he must first thresh the pods out of the straw; then thresh the pods, and rub and winnow the seed out; then dry the pods or husks again in the sun, and thresh them over again; and so repeat these operations, till he gets the seed separated from the husk.

But the best way is, to thresh the pods or husks out of the straw, and then take
them

them to the mill, and shell them as you would oats; this is very easily done, and saves a great deal of labour, and feed too; as little by this will be wasted.

There is one piece of care, or observation, that a farmer should never lose sight of, if he expects a full crop of feed; and that is, never to lay up his first growth of clover for feed; for though it may grow vigorously, blossom, and look well, to him who is not a true judge, yet it will not bear feed.

Therefore, when a farmer eats his clover in April or May, he must see that his cattle eat it near, and crop every branch; as those that miss cropping, though they flower, will not feed; for this reason, I recommend eating it in April, mowing the hay-crop in June, and saving the seed from the last crop, which will produce the most and best feed.

But, if the farmer chuses, he may not eat it in spring; by which means he may mow

the first crop of hay by the middle of May, and the next crop raise feed from.

This will bring the seed-crop more in the middle of summer, when the heat is strong; so consequently it will be in less danger of being spoiled by autumn-rains, which come earlier in Ireland, and the north of England, than they do near London.

I mention this, that every farmer may be a judge of his own situation, and suit his crop accordingly.

It is a gross mistake, and very often committed, to let the first crop of clover-hay stand too long before it is cut, for several reasons.

First, when it stands till the bottom of the stalk turns brown, it is drained of all its substance, and also has exhausted or weakened the root too much of its vigour; therefore, when it is mown, the stubble is left as dead or lifeless as that of corn; and the next shoot or branch which comes forth,

OF HUSBANDRY. 51

forth, must be from the very root, which admits of a fortnight's delay in the growth of the crop: whereas, on the other hand, if it was cut when the stalk is green and full of sap or juices, it would send forth fresh shoots out of the very stalk, a little below the cut; and the coat of clover being stripped off, the roots are supplied (before they are left too weak and sickly) with fresh air, and kept in vigour and strength, to support, and bring to maturity, the succeeding crop.

It is true, there may not be so great a bulk of hay in the first crop; because the stalk is cut when soft and full of juices, and therefore flattens, closes, and runs or cakes together when in stack, &c.

It also requires more care in making; but as this happens in the height of summer, there is not so much danger that way; and a stone of such hay is worth two of that which is left to stand till the stalks are left dry, hard, and impoverished.

Clover may be sown, with success, amongst oats; also, if wheat or rye be sown in broad ridges, it may be sown amongst them, in May, and rolled in.

I have seen good clover, where the seed was sown amongst flax; but the best of these crops, for raising clover, is barley; as this grain is not apt to grow with so long and gross a straw as oats, wheat, or rye; therefore the clover is not in equal danger of being smothered. Yet there is no general rule without an exception.

I have seen good and bad clover among all these crops; a deal depends upon a good season: barley, however, has the best chance; as we generally till well for it; barley being a tender grain.

CHAP. X.

On CATTLE hosed by CLOVER, and its
Cure.

THOUGH it may seem strange or odd in me, to make a comparison between the human and the brute creation; yet true it is, that what will cure one, will also cure the other, if due regard be had to proportion the dose agreeably to the strength of the animal.

In many instances, similar cases might be quoted to support this assertion; but, as few words will answer my present purpose, I shall leave every thing else to the recollection of my reader.

The most natural difference between the entrails of the human and the brute species, is, that the former lie in a perpendicular, and the latter in a horizontal direction.

What I aim at by this inference, is, to make my reader feel by himself the disorder that affects a beast, by eating over-greedily.

I dare say, not one of my readers but, upon recollection, will find that he, some time or other, has eat his meat hastily, without taking time to chew it, till it has given him uneasiness in his bowels, by a suppression of wind; insomuch, that he has been obliged to halt, or pause a little, till the bit settled; after which he breaks wind with a belch.

This disorder, when coming on, he plainly feels, is no other than swallowing too quick.

Therefore, I say, when he finds the gullet overcharged, and the wind so prest, he stops till all is right again; but if he was still to persist in eating, the consequence might be dangerous: and I doubt not but many lose
their

their lives by it; as we often hear of people dying at meat.

Just such is the case with cattle eating clover: for the nature of clover is such, that a beast can fill his mouth quicker with it than with any other grass; which is owing to its bushy top, and soft, and small stalk.

All natural grass is small at top, and thickest towards the bottom; it, therefore, takes a good pull to break it off; which gives time for a swallow; neither can the beast fill his mouth so quick. But clover being quite the reverse, he can gather it faster, or quicker, than the gullet can discharge it into the maw.

Therefore, one mouthful, which is very large, rolled up in balls, overtakes another, till it stops up the passage of the throat, and suppresses the inward air; and so puts a final stop to respiration; insomuch, that all the inward machinery is like a blown bladder.

All these, pressing upon the lungs, hinder them from playing; which causes a total stagnation of the inward machinery; and if a remedy cannot be procured, before the blood abates in its circulation, and cools in the veins, death must unavoidably ensue.

I remember an accident, that happened when I was a school-boy, and as I was present, I shall repeat it, as follows:

A farmer turned a parcel of cattle into a clover-field, in the month of May; but, in a small time after they were turned in, a bullock was observed to be very sick; he was immediately drove out of the field into the town, which was within two or three hundred yards; but, in the town, before he could reach the farmer's house, he dropped down dead to all appearance; it was opposite to an ale-house.

Immediately people flocked about him; a drunken blacksmith was in the ale-house, with

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with a gun-barrel in his hand, and the breach pin out, as he had been cleaning it; he came out, running, among the rest, and thrust the gun-barrel up the bullock's fundament; out of which issued a deal of wind.

Another by-stander run his pen-knife into his flank, behind his last rib.

I had a pellit-gun in my hand; and they put it into the orifice, out of which also rushed a deal of wind. They also bled him. This was all performed instantly.

He began to shew signs of life; they then gave him a clister of warm milk, oil, and brown sugar.

In short, with one cookery or another, the bullock recovered; and I believe every thing that was done was new; as most present were strangers to clover.

As

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As it was, only then, making its entrance into the neighbourhood, therefore they were all strangers to its effects. And though they stumbled upon a cure, yet not one of them perhaps, could give a rational, coherent answer upon the subject.

The person to whom the bullock belonged, was a very sensible, curious, enterprising man.

He was the first that introduced any new thing into the neighbourhood; of which clover was one instance.

As he believed the bullock dead, he stood very coolly looking on, and let them do what they would. After which, he made very sensible remarks.

I have heard him, since, say, that that was a lucky bullock; as he had been the means of saving him many cattle.

By

By the experiment he afforded, the people's attention was so much engrossed with this bullock, that a cow, and a two-year-old heifer were dead in the field, before they had presence of mind to attend to them ; but the farmer told me he never lost one after.

I asked him his cure ; he told me, that he never wanted one ; for he looked upon a prevention as preferable to a medicine, or any other operation.

His method was, always to keep the cattle stirring, when they were first turned into clover ; so that three or four mouthfuls were as much as they were admitted to take at once ; and then to walk a few yards, till that had time to settle into the maw ; so as the gullet-wind, as he called it, had time to arise.

Thus he kept them stirring, till they were full ; and, for a few nights at first, turned them into a common grass-pasture.

There

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There is no doubt but this is a very necessary precaution, and, if duly attended to, would render every other operation, or medicine ineffectual.

However, lest through neglect, ignorance, or accident, cattle should break into clover, it is absolutely necessary that a cure should be pointed out.

I believe my reader will admit, that the nearest step to a cure, in any case, is, to know the disease, and the cause of it: this will make the cure more certain.

Now, we find, that the cause of this malady is by suddenly over-filling the neck-gut, which swells, and stops all the vent of the throat or wind-pipe.

This over-pressure closes the lungs, and hinders them from playing; which puts a final stop to the circulation of the blood through all the veins.

When

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When this loses its motion, it immediately cools and thickens.

Therefore, in this case, every step must be very quick; as delay will put it out of the power of medicine to relieve.

The first thing is, to open a vein; the next, to make an incision with a knife in the flank, about three inches from the hinder rib, as near the hip-bone as can be, so as not to enter into the flesh; there is no danger can ensue from this, provided you keep high enough up, not to touch the entrails.

Put a quill in the orifice, to keep it open; while this is doing, warm a quart of milk, and put it into half a pound of treacle, an ounce of anniseed, and a table-spoonful of sweet oil; mix all together, and give it as a clister: this will nourish the entrails, and keep warm and alive the blood, till a respiration can be recovered.

If

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If a clifter of this fort cannot be got, ftamp an onion; mix with it butter and pepper; and put it up the fundament; it will caufe an attraction, and a heat: pour fome sweet oil, or quicksilver, down the throat; which will help to force a paffage for the wind to operate.

C H A P. XI.

Remarks on CLOVER.

SOME persons object to the eating of clover, the firft winter after it is fown; believing it to weaken the crop; but, on the contrary, I believe it ftrengthens it; for, as clover grows amongft corn, it is drawn up weak and tender, by its warm fituation, being furrounded by the crop; and when a tall weak plant of this fort comes to be fuddenly expofed, it is a wonder if the delicacy of its constitution can bear the fudden change without

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without a shock, as it is not fit to encounter with the inclemency of a winter.

I look upon it to be much better, to eat off this weak aspiring top; which makes the root strike downwards, grow strong, and incorporate with the soil and earth; the top also will send forth fresh shoots, more of them, and of a firmer texture or kind.

To convince myself of this, I once divided a field of clover into two parts, one of which I eat in common with the rest of the stubbles; the other I did not eat at all till May.

The part I eat, I found to be a good deal ranker, or thicker set on the ground, than the other; and I observed, that the leaves of the clover, that were not eaten, turned yellow with the frost, and died away.

In this case, as in most others, reason speaks for itself, that it is better to take off
a sickly,

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a sickly, tender, weak, part or fibre, than to let it die away, and thereby communicate its state of mortification to the main body.

C H A P. XII.

On LUCERNE, its Perfection and Management, also the Method of drilling with the common Plow, &c.

LA Lucerne, so called by the French, but lucerne by the English, is a very profitable grass, and particularly where the climate is hot, and the land light and sandy, or gravelly and rocky.

It is an excellent food, either as herbage or hay; but its greatest perfection is for foiling of cattle; which makes it of great service in some parts of England, where there are
few

OF HUSBANDRY. 65

grafs-land is scarce; infomuch that the farmers have no place whereon to turn their cattle, except on bare commons already overstocked, or tether them on the end of a ridge of corn, in an open town-field.

I say, in such places, I know not any grafs-crop that would turn out to a greater advantage, or be more useful to a farmer; for, in such places, let a man's stock of cattle be ever so great, he cannot lay his land down for pasturage, let his inclination be ever so much for it: as, supposing the town-fields to be four or five hundred acres, yet he will not have above two or three ridges in a place; he is therefore obliged to concur with his neighbours, in the point of farming; not having it in his power to lay his land out for grazing; but as there are scarce any persons in the said towns, but what have small fields, or crofts; they, therefore, might sow lucerne on their ridges in the open fields, and keep what number of cattle they please, by soiling them in

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their crofts; and a great advantage they would have, in saving the dung too; a very material consideration in these corn-countries.

The case in Ireland, however, is quite different, as there are few who hold land, but what have it closed to themselves; therefore they seldom want grafs in summer; and consequently need not plow up their lands for that purpose. Moreover, the lands of Ireland are naturally given to grafs.

Therefore in this country, I look upon clover to be by much the better crop; for though it does not last so long in the ground, yet it lasts long enough to see the natural grafs up; and what is it we sow artificial grafs-seeds for, but to supply the defect of this, or rather to keep the land in profit, till the natural grafs recovers its root; which has been damaged, or otherwise destroyed by long tillage?

Further,

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Further, lucerne is not so early a spring as clover; for if we consider, that it is the sun we may thank for nourishing the earth, and who makes her send forth her early spring; and that it is unquestionably the surface which first feels the warmth thereof; we must conclude that any vegetable which roots shallow or horizontally, will make the earliest shoot, consequently lucerne must have the more backward spring, as it strikes a great deal deeper than the clover, and therefore feeds in a colder climate.

I would further observe, that clover improves land better than lucerne, by its root spreading more largely and plentifully thro' the sod.

I am strongly of opinion, that nothing in nature improves land equal to the root of clover; for if it only lies one year, plow it up, and the furrow or sod will be a perfect mattrafs; and after that

plowing, the root soon rots, and becomes the finest manure upon earth.

But this we cannot say for lucerne; for though what root there is, may make good manure, yet it does not spread, or produce half so much root in the sod; because it strikes downwards, like a parsnip; and therefore a great deal of it lies too deep, to be raised by the plow.

The two chief perfections of lucerne are, first, its yielding a plentiful produce, tho' sown in a sandy, gravelly, or rocky ground, provided it be made tolerably rich, and finely tilled.

The next is, its being fit for foiling of cattle, which, as I hinted before, is useless in Ireland, or most inclosed countries; as I hardly think any one would be at the expence of men, to cut and carry soil to his cattle, when he has good pasture-fields, for them to run in, and help themselves; besides, cattle never thrive so well, when penned
up

up in a small pasture, as when they have room to rake over.

In short, there are so many arguments in support of clover being a better and more suitable crop than lucerne, especially for the lands and climate of Ireland, the north of England, and Scotland ; that, on experience it must always be found to have the preference.

Every farmer, however, is the best judge what sort of land he has, or what situation he is in ; and accordingly may suit his crop thereto.

When a person hears two tales, though he be a stranger to the affair, yet he may give a shrewd guess which is the most reasonable, or likely to suit his purpose.

Lucerne requires a deep foil ; and though the seed must be thinly covered, when sown, yet the land must be prepared by deep plowing : as the root strikes deep.

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It is necessary that the land have a good summer-fallow ; when the corn is sown and harrowed, sow the lucerne, and harrow once in a place, with the harrow turned the wrong end foremost ; and when the corn is come up, roll it.

If the lucerne be intended for summer-pasture or meadow, sow it in the broadcast way, and in order to sow it even, sow it twice in a place.

Take no more in your hand than you can hold between one finger and thumb, and on a ridge that is twelve feet broad, make three casts ; this will sow at the rate of four pounds to an English acre ; at sixteen ounces to the pound, and five yards and a half to the perch, and so in proportion for the Scotch and Irish acre.

If the lucerne be intended for soiling cattle, it is by much the best to sow it in drills, viz.

Two drills, eight inches asunder; and then an interval of three feet; and then two drills more, and another interval of three feet; and so on, through the piece you intend to sow.

It may appear to farmers, that are strangers to the drill-husbandry, that it is a very nice affair, and not to be done without the expence and nicety of a drill-plow; nor did I ever read any instructions that directed it to be done by any other way; but be assured there is nothing more easy; for a common plow will make a very good shift, when managed in the following manner, viz.

The land being well prepared for the seed, if lucerne is to be sown in drills, without a corn-crop, begin to plow at one side of the field, and plow a furrow two inches deep, and eight broad; in this scatter the seed; then plow another furrow; in this sow none; but in the next sow another row; this leaves a space of eight inches be-

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tween the rows ; then plow five more, and in the sixth and eighth scatter the seed ; so go on, leaving five furrows unfown, and two fown ; this will leave room enough, between the two rows in the wide interval, for the plow to go.

As soon as the lucerne is above ground, go with the plow, and lay a little mold at the stem of each row ; and always when the weeds grow, plow a couple of furrows in the wide interval ; which will kill the weeds, and fallow the ground, and give additional vigour to the plants : weed or hand-hoe in the narrow intervals.

If lucerne is to be sown amongst corn, it cannot be set in drills, as above, with the plow ; therefore, stretch a line at the same distances of forty eight inches to the wide interval, and eight to the narrow, and shake the seed along it, and harrow it in, as if it was sown in the broad cast way ; and, as soon as the corn is out, plow the wide intervals,

tervals, and hand-hoe in the narrow spaces between the two drills.

There can be nothing more easy than drilling and horse-hoeing in the above manner; which may answer the end, by sowing any sort of grain, and particularly wheat, beans, and peas.

Instead of a drill-box, or hopper, which is used in plows, take a tin-porringer, and punch three or four holes in the bottom, in the nature of a cullender, just the size of the grain or seed you have to sow; by shaking along the furrow, you may bring yourself to a tolerable degree of exactness, and swiftness too; for one man may sow as fast as a plow will go.

The time to mow lucerne is, when just beginning to flower.

Avoid making the hay too green; for it will appear to be dry when it is not,
and

and therefore may give again, and damage, it being so full of sap or juices.

When it is cut for foil, there is nothing more than to cut the oldest first.

It may begin to be cut, when six or eight inches high; and so continue cutting, as it is wanted.

C H A P. XIII.

The most suitable Lands and Climate for
LUCERNE, with Remarks thereon,
&c.

THOUGH the lands of England, Scotland, and Ireland, are generally pretty good, and naturally given to grass; yet I dare venture to say, that more than three fourths of all these kingdoms are not proper for lucerne.

The

The farmer that proposes to cultivate this plant, must first duly consider its nature; that it is a native of a warm climate; and that it has a long, gross, tap-root, which runs perpendicular; and therefore feeds chiefly from the under stratum, perhaps at the depth of two or three feet.

Then again, let him turn his eye on his land, and see if it be of a deep, rich soil; if the under-stratum be a loam, or limestone-gravel, or a deep loamy sand, or a warm rich gravel, or a black hazle earth: if it be any one of these, he may venture to sow his lucerne thereon; provided he plow deep, and till well.

However, in most parts, I am afraid he will find, instead of the above, a strong clay-bottom, at the depth of about four or five inches, which is of a solid, close, hungry nature, that will not admit the root of a plant to enter; nor has it any nourishment that a plant can feed upon, without first being opened by tillage and the air.

And

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And what still adds to the evil, is, that it holds water like a dish, and will not let it sink through, but keeps it swimming on the top, amongst the sod, surface, or upper-stratum, all winter; so that if cattle tread thereon, it immediately works, or poches to mortar.

Then, certainly, such land cannot be suitable for a plant of such a tender nature, and which seeks its nourishment so deep.

In such land, clover has the advantage; as it requires not so deep land; because the root runs horizontally, and keeps near the warm surface.

A farmer, seeing the nature of the plant, and the land suitable thereto, may square his affairs accordingly, in suiting proper crops to proper land.

A voluminous writer tells us, that the lands of England are more subject to run
to

to natural grafs, than any other country whatever ; inſomuch, ſays he, that it is with great labour and expence we can keep it from getting head of the lucerne, and ſpoiling the crop.

This, I grant, is the caſe ; and this alone is ſufficient to ſhew, that, in general, lucerne is not ſo valuable in theſe graſſy countries, as in dry, hot, ſandy countries, where natural grafs, or any other plant that roots ſhallow, is burnt up.

From that author's ſaying that England is the moſt graſſy country, I ſuppoſe he was a ſtranger to Ireland, or he muſt have excepted it ; and why it ſhould be ſo, is eaſily accounted for ; as that is occaſioned by the moiſtneſs of the climate, and the coldneſs of the ſoil, peculiar to that kingdom.

It has a cold clay-ſoil, intermingled here and there with loughs, lakes, moraffes, or bogs, the damp from which is exhaled by the ſun, and therefore ſoftens the
air,

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air, and again descends in thick mists or fogs, heavy dews, and small rains, which always keep the land wet, the grass green, and in a growing state.

The rain is never so heavy as in England, but much more constant.

But England has few bogs, lakes, or loughs; therefore the air is more clear and dry.

The rains of England fall feldomer, but much heavier.

Also the winter-frost, and the air is sharper and more intense.

All these considerations must shew, that Ireland is the most grassy country of the two.

C H A P.

C H A P. XIV.

How to manage SAINTFOIN, and its
Perfection.

Saintfoin is a valuable grass, particularly where land is rocky, gravelly, or sandy; and though, in general, clover is the best crop for this climate, yet saintfoin may answer, in some places, very well, where the land is subject to rocks and stones; which makes meadow very scarce, (though the summer-herbage is good and plentiful) as the soil amongst these rocks is naturally good, where it can be cultivated, so as to be brought to any tolerable tilth.

On such, sow saintfoin; and if the soil be ever so scanty, it will strike into every small niche or crevice, and seek its nourishment very deep, where no other grass will live, or indeed can get a footing.

It

It is also good for soiling cattle; but in this lucerne has the advantage; as it is of a quicker growth, and less stagnated with cutting; but, as I before observed, this is of little signification to England or Ireland; as they abound with good summer-herbage.

It is winter-feeding that we are to consider; as also to keep the land in full profit, till the return of natural grass, after long tillage; and this is best effected by the two grasses, clover and saintfoin; clover for the wet and smoothest land, and saintfoin for the sandy, rocky, or more stony parts thereof, such as the wolds in Yorkshire, or Lincolnshire, Chiltern-hills, &c.

As I have, in a few words, given the virtues of saintfoin, I shall not make a long chapter on the management thereof; as there is little alteration to be made between the raising of saintfoin, and lucerne, or clover.

Saintfoin

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Saintfoin may be sown earlier than clover, or lucerne; as it is in less danger of being hurt by the frost.

The land must be well tilled, whether it be sown alone, or amongst corn: if it be sown amongst corn in the broad-cast method, harrow the ground once in a place, after the corn is sown, before the saintfoin is sown.

This will make the ground a little level, that it may not be buried too deep in places. Yet, as it is a large husky seed, it must have a covering, or it will not grow; but, by being harrowed in, when the land is pretty rough, it will be all sufficiently covered, provided it be well harrowed afterwards.

If it be sown in drills amongst the corn, stretch a line, and scatter the seed along it, leaving intervals, the broadest about three feet, and the narrowest eight inches, as directed for lucerne.

If it be sown by itself, it must be got into the ground by the first of March.

Some will sow it at Michaelmas; but I do not think this a good time; for it will not be a great deal earlier; besides, a severe winter may hurt it: and it is further to be considered, that, by keeping it out of the ground till spring, the ground can be winter-fallowed; which will add greatly to the fertility thereof.

If it be sown in drills, and alone, sow it in every sixth and eighth furrow, as directed for lucerne; but have a care, not to cover it above an inch deep, at the most.

Four bushels of seed are generally used to an acre in the broad-cast; but half a bushel in the drill-way, is full enough for an English acre.

Lay up the faintfoin for hay about the first of March; and it will be in blossom
about

OF HUSBANDRY. 83

about the first of June; when it is full in flower, it is time to mow it; manage it in making, as clover.

Observe, in eating it with sheep, not to eat it too near; which will damage the root, and put it in danger of rotting, if they enter upon the head of the root; it is also dangerous to turn large cattle into a crop of faintfoin, till it is well established in the ground; as they will be apt to tread it up, and spoil the plants.

The best method to manage faintfoin, is, to mow the first year; and caution the scythe-man, not to cut too near.

The next year, sheep may very well be fed on it; and after this, it may be pastured or mown at the farmer's discretion; as the roots, by this time, will be well established.

CHAP. XV.

ON RYE-GRASS, its Perfection and Management.

RYE GRASS is a native of our own kingdoms: its quality is such, that it will grow in almost any kind of land.

In cold clay, or wet land, it flourishes greatly; it will also grow well on high, dry, or sandy land; which is very extraordinary, as the opposite extremes are so great.

It is not nice, for it will grow amongst any sort of grafs; it will also encroach amongst corn; but while it is stealing its footing there, it is deemed a weed, and is known by the name of darnel.

It flourishes greatly by culture, and will grow to the height of four feet, upon good land.

The

OF HUSBANDRY. 85

The feed also grows large in proportion, and full of meal.

There are two sorts, one called droke, and the other darnel, in Latin, *lolium*.

They are both of nearly the same quality: there is no knowing the feeds asunder, they are so nearly alike; the droke has a little larger or fuller grain, and I think is something more delicate in its growth; for it generally flourishes best in tilled ground, amongst corn.

It produces a far greater head of feed than darnel. I have counted a hundred and thirty-five seeds in one ear.

The ears of droke and darnel differ considerably.

That of darnel, or rye-grass, grows close to the stalk, in two rows; but droke has a spread, ragged head, of many branches, five or six inches long, spreading

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spreading from the main stalk, on the end of which branches the seed grows in bunches.

There is the same distinction to be observed in common hay-grass, as to the form of the ear; for though the root, stalk, and seed are nearly alike, yet the ears differ, some having an ear like darnel, and others a loose, open, spread ear, like droke.

The greatest virtues of rye-grass are its early growth, and its good quality of growing on any sort of land.

These two excellencies should induce every farmer to provide himself with some of it.

There is no farmer but would be glad of a piece of early grass, to feed lambs on; or, if he had not lambs, to turn in his cows, that are generally dropping their calves in the spring, which would be greatly forwarding their milk.

It

OF HUSBANDRY. 87

It is also excellent feeding for recruiting calves and foals, who have hardly escaped the severity of the winter.

In short, a few acres of rye-grass would be of more value to a farmer, than he can well conceive; and when his natural grass-pasture comes to a head, he may lay up his artificial grass-land for hay, and not doubt of a good crop.

Rye-grass is also wholesome feeding, to mix among clover-feed when sown, as it will help to prevent cattle from hoving.

However, though I have said so much in setting forth the advantages of rye-grass; yet it is not without its fault; and this is, its being an impoverisher of land, though not in a very great degree; for a crop of rye-grass, with the land laid down in heart, will hold good for ten or twelve years.

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Your best œconomy is, to mow it one year, and graze it another, alternately; and though it may be its property to reduce land a little, I do not think a farmer can sow a better crop, provided he does it with discretion, and sows it on his strongest, wet, clay-land, or where clover will not succeed so well.

But where clover will thrive, it is surely preferable to all other artificial herbage; and if I recommend rye-grass, it is only for about five or ten acres in a hundred, to be applied chiefly for spring-feeding.

The culture of rye-grass is very simple and easy.

It may be sown amongst corn, with any sort of grass seed, or by itself, as there is no doubt of its growing.

If it be sown with clover and barley, which is the best management, sow two bushels

OF HUSBANDRY. 89

busshels on an English acre; but if it be sown alone, four busshels is the compliment; and so in proportion, for an Irish, or Scotch acre.

The old broad-cast way is the best to sow it in; for which chuse a calm day, lest it should blow on heaps, as the seed is light.

It may be sown with the corn; for it will take as much harrowing; being a light feed.

Neither is there much fear of burying it too deep; and yet it will grow, if it lie above ground.

Where grafs-land of any sort is too thin, rye-grafs, or white hay-seeds, may be sown on the surface, and rolled, and they will grow the first rain.

The greatest care must be taken, to mow rye-grafs in the proper season, if no regard be paid to the feed.

The

The time to mow it, is, at the first shooting of the ear, when it is full of sap; but if it be for seed, let it stand till the ear begins to turn brown.

There is a medium, however, to be used between both; and that is, to mow it when the ear is full, but the seed not above half-ripe; by this, a good deal of juices are caught in the stalk, and the seed ripens and hardens as the hay is making.

The seed will be small, but sound, and will grow very well; it must be threshed like corn, to take the seed out.

An English acre may produce upwards of thirty bushels of seed.

C H A P. XVI.

The Perfection and Management of
BURNET.

THE world is obliged to one Mr. Bartholomew Roque, who has, for many years last past, been a farmer near London; but is a native of France.

I mention his place of abode, because the lands, and climate near London, differ greatly from those in Ireland, Scotland, and the north of England.

In 1761 this plant was first began to be cultivated for the use of cattle. It is a pimpermell, and commonly cultivated for sallad, and has a smell very much like green cucumber; its seed is rough, like spinage, and of much about the same size; its shape is a triangular oblong; the plant never grows high, being of a spreading creeping nature, and has a very bushy top; it
also

also has a long root, and runs perpendicular, and therefore requires a deep soil.

Mr. Roque's account of it is, as follows :

Says he, it must be sown on sandy or gravelly ground ; and the longest drought will not hurt it ; it also will, either grow, or keep green all winter ; it will grow about half a yard in length in the winter half-year ; it may be mown twice in the summer, and will produce two crops of feed ; it may be fed all winter, with safety from killing the plants ; sheep must not be allowed to crop it too close, lest they damage the root.

The season for sowing it, is, from February to July.

It will bear transplanting ; but it must be sown the broad-cast way ; it must also be trenched two or three spades deep ; but take care, says he, not to turn up dead ground.

Sow

OF HUSBANDRY. 93

Sow twelve pounds of seed on an English acre; harrow the ground before sowing, and lightly after; when the seed is ripe, thresh it between wet and dry; the hay is very good feeding for all sorts of cattle.

He says, that, if it be laid up for meadow in May, it will be ready to cut for seed the beginning of July.

If it be mown for hay, (having no regard to the seed) it will bring three crops in a year, and must be cut for hay, just before it begins to flower; it must be made for hay, like any artificial grass.

Such is Mr. Roque's account of burnet; and as he has a right to know it better than any other person, being the first introducer, I shall neither add to, nor diminish from, his experience.

However, I cannot help taking notice, that if we cannot raise burnet to perfection

section without digging two or three spades deep, as he directs) I am afraid the expence will overbalance the profit; since an acre of ground, by such digging or trenching, and that only once over, will cost about six pounds, besides seed, manure, land-rent, and all other expences.

Again, if we be to take care not to turn up any dead soil, we must not go above five or six inches deep; because, in fact, all that lies below the upper-stratum or corn-mold, is dead earth, till it is turned up to the air, and incorporated with manure, or roots of some sort or other; for these are the principles that must enliven, ferment, and bring it to an active body; for, till then, it is a dead one.

So that, in short, I cannot tell what sort of soil Mr. Roque expects us to work in, except in garden-mold, whose upper-stratum or surface is kept two or three feet deep, by constant trenching.

I rather

I rather think he should have told us to take care, and not throw up the understratum, except it can be done with safety; nor to hurt or spoil the corn-mold, which it certainly must do, if it be a hungry, cold, red clay, or ramel.

If this be the case, as doubtless it is, the farmer must first examine how deep the staple of his land is, and fix upon that which suits it best, being the good deep sort; it is true, a strong clay-bottom may be made to answer for it; but it must be by the dint of labour and manure.

C H A P. XVII.

On Manuring LAND.

MR. Tull tells us, (and very warmly supports his assertion), that dung is a useful article to a farmer, particularly in corn-land; and recommends tillage before it;
daily

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daily experience tells us, he was in some degree mistaken. For though I admit, and am as clearly satisfied, as he could be, that plowing will enrich or fertilize land to a great pitch; yet I am well convinced, that dung, manure, or compost of any sort, which bears a proportion of salts or fertilizing oils, will cause a fermentation, by adding to, and mixing with the salts of the air, and therefore doubtless will add to the enriching of the soil.

Again, though reason speaks so much in favour of enriching the soil by plowing; and though Mr. Tull, and all the authors in the world were to make it as plain as one and one make two, that tillage is sufficient to make poor land rich enough to produce any crop; yet nine tenths of the farmers would not follow it; and though a farmer may give his land a good dressing, fit for any crop, by twelve plowings, at about thirty shillings expence; yet he would rather bestow three or four pounds an acre in manure to put thereon.

So

So blind is man to his own interest, particularly if it lead out of the old road.

For my part, I am of Mr. Tull's, and several other authors opinion; and therefore shall not manure corn-land, but enrich that by plowing, and lay the manure upon grass-land; where reason tells us it is of most use.

First, because grass-land lies in a close consolidated body; and therefore is deprived of the enriching qualities of the air penetrating there amongst, which plowed land enjoys, or receives, every time it is turned up.

Secondly, it nourishes the roots of grass, and suppresses, or at least retards the growth of moss.

Thirdly, it is observable, that manure always sinks; therefore, if it be laid on when in tillage, it is an equal chance, but one half of it will be lost, because what the

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plow turns to the bottom of the furrow, still keeps sinking lower and lower, till it gets out of the reach of the plow to turn up, or plant to feed upon; but on the other hand, when it is laid on the grafs, or lay-land, it drains through the surface in its passage, and ferments with, lightens, and opens the earth, and makes it rich and mellow.

Fourthly, dung, in particular, breeds weeds, flies, worms, &c. which causes smut and mildew.

All these reasons must appear very plain and obvious to a farmer's understanding; and I would have him to bear them in mind; and when he reads over the following list of manures, he may the more easily determine with himself, how to adapt this or that to its proper soil, or part of husbandry, according as it suits his conveniency for carriage and cheapness.

C H A P.

C H A P. XVIII.

On MANURES in general.

ANY thing that has the most salts or nitre, is the richest manure; and therefore a less bulk is required to be laid on the land.

As for instance, some sort of marl requires to be laid nearly as thick as the plow goes; and others not much thicker than lime; being so strong, that, were too much laid on, it would overpower or destroy the land, to such a degree, that nothing would grow well for two or three years after.

Marl will last longer in the ground than any other manure.

I have known land, which has given fifteen good crops running, after being well marled.

Few farmers but what may know which is the best manure, and the easiest to come at, according to their own situation; therefore I shall leave them to judge for themselves, which suits their purpose or situation best.

Horse and cow-dung is good almost for every sort of meadow-land; but I do not approve of it for corn; the former is the hottest in nature; and therefore must (to chuse) be laid on the coldest land: every one knows best what condition his land is in, whether rich or poor; for thereto it must be suited in quantity.

Pigeon-dung is a very rich manure, and will bear land-carriage better than most others; as a little will go a great way.

In England, it will sell from ten to thirteen-pence per bushel, forty of which will give an English acre a good dressing; it
must

must be sown upon the ground, and harrowed in with the grain, by the way of a top-dressing; it will be found to enrich the land two or three crops.

Those that would make the most of a pigeon-house, should spread over the floor, every ten days, three or four bushels of ashes; which will help to keep the pigeon-dung from caking together, and make it spread even, and go farther.

Hen or fowls dung, of all sorts, should be mixed with ashes, for the above reason.

Little-house-dung is one of the richest of manures, but the least regarded, on account of its soft, stinking, nauseous quality; but this is easily cured, by throwing a sufficient quantity of roch-lime into the little-house, which will dry it to such a consistence, that it will spread as well as ashes, and have no disagreeable smell.

Thirty bushels will spread an English acre; harrow it in with the corn, by way of a top-dressing; or spread it on, in February, for a wheat-crop.

Soot is a rich manure for any kind of land.

Writers differ greatly in their opinion, whether coal or wood-foot be the richest or best; but this is throwing words to the wind, as no one will change his fuel for the sake of the difference in the foot; the matter is so trifling, that it is not worth entering into any particulars about.

Soot is foot; and he that lays sixteen bushels on an English acre, of any sort of foot, gives his land a good dressing; and less will not do: it must be harrowed in with the corn, by way of a top-dressing; or it may be spread, after the corn comes up, and it will destroy red worms also.

It

It will do very well for meadow; provided it be laid on, just after the hay is got off: it will last five or six years so, as to answer for crops.

Ashes is another good manure for a crop or two, and particularly for turnips; as turnips from burn-beating are the sweetest and best of all others.

Ashes are raised by several means, and from various principles.

Some by burn-beating, others from our constant firing, such as coal, turf, or wood; the richest of these is wood; the next in value is turf; and the worst of the three is coal; though between turf and coal there is no material difference; all sorts of ashes lose much of their strength, by being thrown out of doors to get wet; they will last in the ground two crops.

A hundred and sixty bushels of wood-ashes, and two hundred and twenty of
H 4. either

either turf or coal, is the due for an Irish acre, and so in proportion for an English one; they must be harrowed in; but if for wheat-land, it is best to spread them, by way of a top-dressing in February.

Burnt clay, or backs of ditches, is another forced manure, and will bring one good crop; about three hundred and twenty bushels on an Irish acre, being two bushels to each square perch, will give land a tolerable good dressing; this must be harrowed in with the corn; as so much carriage, going on wheat, would spoil it.

Now I come to treat of the mother of all manures, namely, salt; for every sort of manure is higher or lower in value, according to the salts it produces; and every sort of manure is proportioned to the land, according to the quantity of salts or nitre it is thought to have in it, and not to the bulk.

Formerly,

Formerly, salt was thought to be an impoverisher of land ; but experience has taught wisdom ; it is now found to be otherwise ; provided it be duly proportioned to the state the land is in, and mixed to mollify it, as follows, viz.

Take six bushels of salt, six bushels of lime, and six bushels of dry ashes : mix all together ; let them lie some time, to incorporate together ; then spread them on the land, and harrow them in, with the seed ; this is a sufficient dressing for an English acre ; for it is better to repeat it, than to lay too much at once.

By being thus mixed, one particle incorporates with, and mollifies the other ; salt, in itself, is rather too severe and harsh in its nature ; and, if laid too thick on, might prove of bad consequence ; whereas, if conveyed into the earth by a soapy smooth method, it will prove the very enricher the earth wants, to send forth vegetation ; this will last for three crops.

I am

I am convinced, if a farmer was to mix salt with any sort of earth or manure, and let it lie long enough to incorporate, he might lay it on thinner in bulk, in proportion to the salts it contained; and he would find his ends in so doing.

Sea weeds, shells, fish, sea water, sea-sand, all these bear a proportion of salts or nitre, and therefore must be esteemed a manure; though such will not last more than two years in a tillage-crop.

Old rags, rotten sticks, or in short any thing will make manure, that will rot or putrify; for, by such comes on a fermentation with the earth; and crossing nature, in any case, makes it work, ferment, and divide the particles of each other. Even taking one piece of soil, ten or fifteen perches from its native spot, and mixing it with another piece in the same field, will set it a-working, so that one will help the other in fertility.

Lime

Lime is a manure known by every one, though but few know rightly how to proportion it to the land; as some land will require more, by twenty bushels an acre, than others; and on the other hand, a hundred bushels of some lime will be strong, and give the land as good a dressing, as an hundred and thirty of others.

A farmer must consider all these circumstances, before he can be a thorough judge how to dress his land properly; he must observe, that the deeper the corn-mold is, the more lime it takes to enrich it; and indeed this is the case with all sorts of manures; therefore he must bear this in mind; it will last eight or nine years.

An hundred and sixty bushels, being one on every square perch, are sufficient for the worst land in England, at one dressing; but if the lime be stronger than common, lower the quantity thirty or forty bushels.

The

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The strength of the lime is known by the lesser or greater quantity of sand it contains; for the more grit or sand, the weaker it is.

The way to try lime-stone is, by dropping a little aqua-fortis on every stone, that is likely; and if it hisses and froths, it will make lime; but it will take no more effect on any other sort of stone, than water would.

Lime is one of my favourite manures, as I have seen it work miracles; and, if properly managed by proportion, never fails its proprietor.

The best way to try marl, lime-stone-gravel, &c. is with vinegar: take a glass of vinegar, into which put a little marl, or lime-stone-gravel: and if it be good, it will work up, froth, and fly in sparks over the glass like champaign, and make a noise like new barm; but if the earth be poor, the vinegar will take no effect; but the earth will fall to the bottom, without life
or

or motion, and the vinegar will be fine above.

Soaper's waste is a very good manure; about twenty tons are sufficient for an English acre.

Large quantities are made use of, about Liverpool; which are brought over from Dublin, as ballast in ships.

They generally sell it for about three shillings a ton. The land will receive benefit from this dressing for five or six crops.

Ashes made of weeds, for the time they last, are nearly as good a manure as can be laid on land; and there are few farmers but what have plenty of those weeds about their houses; but the way to make the most of them, is, to dig them up by the roots, and take a sod along with them; by this means they will yield a greater quantity of ashes, and the roots are fuller of salts than the top: this manure is spent by the first crop; and therefore the second crop will not receive much benefit by it.

Forty

Forty bushels will give an English acre a good dressing; harrow them in, with the grain; or they may be spread on green wheat, any time in winter or spring, by way of a top-dressing.

The compound of manures as follows, I have tried, and find to be a great enricher, and very cheap, viz.

Take eight bushels of bay-salt, the like quantity of lime, and the like quantity of ashes; mix all these together, and let them lie two or three days in a heap.

If you intend it for corn-land, throw up the corn-mold in the middle of the field you intend to manure, to the bulk of about sixty bushels; with this mix the compound well; then clap it up close in a heap; and turn it every week, till you lay it on the land; the oftener you turn it, the better, as the air will assist the different particles in working or fermenting together.

OF HUSBANDRY. 111

If you provide it six or twelve months before it is wanted, the better and smother it will be.

This is also to be applied as a top-dressing, either to be harrowed in with the grain, or sown over green wheat in winter.

If you would lay it on lay-land, mix it with backs of ditches, or the like, in the most convenient place for carriage; the best time to spread it on the meadow-ground, is, about Michaelmas; but, if corn-land, harrow it in with the seed; this is a due quantity for an English acre.

The expence, in the middle of England, would be about twenty shillings. And the ground will be better for three or four crops.

Malt-duft is an exceeding good manure for strong or deep land, by way of a top-dressing,

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dressings, either to be harrowed in with the seed, or sown on in the beginning of February.

Sixty bushels is a good dressing for an English acre.

It is particularly good to sow on a crop of green wheat; but if it be sown among spring-corn, it must be harrowed in, along with the seed.

It will answer for sand-land; but, in this case, it should be laid on, early in winter.

This manure will not last longer than two crops.

C H A P.

CHAP. XIX.

On LIQUID MANURE.

THIS is a stagnated reservoir of water, of a rich, green, or blackish colour; and few farmers in England but what have it near their houses, by way of horse-ponds, and where cattle drink, or stand to keep them from flies in summer, which by their urine and dung is turned green or black, and made very rich; also where dung-hills discharge themselves into; as there is generally a receptacle for such, near a house.

I am greatly surpris'd to see this valuable manure made no use of in England, Ireland, or Scotland; did the farmers know the value of it, as well as I do, they would not have one gallon lost.

In Germany and Flanders, they think more of it than they do of a dunghill, and will go and buy a pit of liquid manure, and carry it several miles.

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They make their little-house-dung into liquid manure.

In short, I know no manure that is more certain to give one a good crop, than this.

The first time I tried it, was, in watering a garden out of a horse-pond, which the dunghill dripped into; I found a sediment at the bottom, which I, constantly, at the time I was using it, kept stirring from the bottom, so as to raise all the sediment or manure.

I never used any other dung, yet I had remarkably great garden crops; such lettuce I never saw; my gross-lettuce was like cabbages.

I watered my wall-fruit, such as peaches, nectarins, apricots, figs, vines, and cherries; and I never, in my life, either had or saw so great crops.

The

OF HUSBANDRY. 115

The next time I had an opportunity to try it, was in this manner, viz.

It happened to be a dry summer, and corn was dear; which was the occasion of many beggars; which, indeed, Ireland never wants (for it was in Ireland); being naturally of a charitable disposition, I gave a deal away.

When sturdy able beggars used to come, it was natural to ask, why they did not work; the answer was, they could get no work.

At this time, I had little employment for labourers; however, I was resolved to strike out some work for them. I had a meadow near the house, which was burning by the heat of the sun; for it was a very hot time.

I got tubs, that held about four gallons each, and agreed to give every beggar, that said he wanted work, a farthing for

I 2

every

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every tub of water he carried out of a horse-pond, and spread over the field; I kept the water always stirring, to raise all the mud I could.

This scheme answered two or three good ends, as far as it continued to take place.

First, it got the people a little money.

Secondly, it raised me an exceeding good crop of hay.

Thirdly, it effectually cleared the house of beggars; for it was soon reported, that if they came near my house, they would be made work; but, as it proved, this was the worst part of the story, for they left me too soon; if they had staid, I should have had a good crop of hay through the field, but they left me by the time an acre was manured; it cost me between four and five shillings; but a good many tubs were carried gratis; for
when

OF HUSBANDRY. 117

when some of them had carried two or three tubs, if I turned my back, or went into the house, they threw down their vessels, and sneaked off without asking for their wages.

I would advise every gentleman, or farmer, to provide themselves with a stanch pit, or reservoir, for this purpose, so situated as to receive all the drippings of their dung-hills, hog yards, and washing water, or the like.

In order to carry it on the land, fix a hoghead in a cart, the hind-part of which must be lowest : inclose the cart with boards, and the hind-board must be bored full of gimlet-holes all the breadth of the body ; the top or bung-hole of the hoghead being behind, let go the water, and the gimlet-holes will divide it the breadth of the cart, in the nature of a water-pot.

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Keep the horses moving slowly on, and the water unloads itself equally over the land.

Carry out your water in the first dry time; so the land will not cut; it is valuable for grass or corn: broad wheels are most proper for this work.

C H A P. XX.

On CLAY and SAND; shewing how, when mixed together, they operate to make good Soil; though, when separated, they are of very little Use.

THE most desirable state of land, is that of a loamy clay; it is known, in some parts of England, by the name of warp-land; it is in a middling state, neither a binding clay, nor a loose sand; it is a mixture of both, but the clay is most predominant, which is the reason why it is called

called a loamy clay; it is of a bluish greasy colour; it is generally of a deep staple, and if it be well tilled, scarce ever fails of bringing a good crop of any sort; nothing can be sown in it (suitable to the climate) but what it will make flourish.

The next in value is that of a loamy sand; this is also a mixture of clay and sand; but in this the sand is most predominant, therefore the emphasis or stress of the word is laid on sand: this staple of earth extends itself to that of haste earth; for though haste earth and loamy sand differ in name, in quality they are nearly alike; only the lighter and opener they are, the more sand is in the compound.

Sometimes, indeed, the sand is mixed with a black, light, smooth earth, inclined to a turf, or peat-mold.

This is a light water-shaken earth, and lower in value, than if mixed with a strong clay.

In my travels through England, I have often seen a farm, one part of which was a strong, tough, obdurate clay, and another a light, blowing sand; so that, in fact, the two bodies, separate, lie in a barren, useless state. If we lay dung upon the sand, its loose, open nature soon lets the salts drain through it; so that its virtue is soon exhausted. If we lay it on the tough clay, its particles are too weak to adhere to it, or to open or divide the solid congealed body of clay, so as to work it by fermentation, and open or divide it into small particles, without an immense quantity.

And where there is so little laid on, as not to establish itself into this consolidated body, or move it by fermentation, it melts away with every shower of rain that falls, and runs off by the surface, or purges itself out of any vent-hole it can find.

But if a coat of sand was laid on the bed of clay, it would be sure to make its way

way amongst it, because it is of a cutting, ponderous, searching nature; therefore it will divide the glutinous clinging body of clay, into small particles, which would cling or stick to every grain of sand.

The nature of the two bodies, mixing together thus, admits, or rather opens a passage for the air, to penetrate amongst it; so as to cause a fermentation; for nothing will or can ferment without air.

It is the air that raises every thing to life and action; it is the air, that is conveyed into drink in the body of barm, that makes it work, or ferment: this is the case in flour also; for, conveying the air among the flour by the means of the barm, causes a fermentation, for barm is scarce any thing else but air; you see, if you put new ale into bottles, before it has purged itself of barm, or, more properly speaking, of air, it will burst the bottles.

Or

Or if you drink it, you convey, among the body of the drink, air into your own belly, which you generally discharge soon after in a breach of wind.

I mention these things, to open the ideas more fully to my reader; that he may know what I mean by fermentation; for if he do not open a passage into the body of clay, with some instrument, or compound, so as to admit, or make a passage for the air to penetrate therein, to raise it to action by fermentation, it will remain a dead inactive body; and if any seed happen to be bound, or inclosed therein, it will never grow, or vegetate, till the earth is opened about it, to give it air.

I say, any sort of seed, that contains an oily matter, such as rape-seed, cabbage-seed, turnip seed, ketlock seed, mustard seed, or the like, will lie in the ground a thousand years or more, and will neither rot, nor grow, till it gets air.

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OF HUSBANDRY. 123

The oil preserves it from rotting, and grow it cannot, unless it be raised to action by fermentation, and such fermentation cannot arise without air.

This is evidently experienced almost every day; for, if we plow up a piece of lay-land, that has not been plowed for several generations, there is great odds, but, upon being turned up, some of these oily seeds, I mentioned, will grow; and it is evident that they would have grown before, if they had had air.

I mention these things, to prove how necessary it is to open the earth, either by tillage, or by mixing different bodies of different natures together.

And as we see that loam is the best sort of corn-mold, how easy is it to make a loam, by mixing sand and clay together?

If a field be a strong clay, lay a cart-load of sand upon every square perch;
and

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and this will make a compound or body of earth, commonly called loamy clay, because clay is the predominant article.

This will open and divide the body of clay; the air will incorporate therewith, and bring on a fermentation, which will swell, open, and reduce the earth to a friendly consistence, which will admit the roots of plants to incorporate or search among it for their food.

Suppose a field be sand, it is of little use, perhaps, to its proprietor, as it will not feed either the roots of corn or grass; that is, it is of too open a nature, and wants a slimy, smooth, gluey substance, (such as clay consists of) among it, to unite the gritty, pebbly particles of the sand together; each of which particles, before, was a calised, hard, separate body, out of which issued no nourishment for plants, as the grain or staple was too coarse or large for the fine fibres of a root to feed upon; but, when clay is introduced amongst it, the slimy, smoother particles thereof wrap round or clog about the grains
of

of sand, which, being assisted by the air, and the salts thereof, divides these little stubborn round bodies into smaller particles, by shelling, or melting scale after scale from them; so that the body of the sand, and that of the clay, being melted into a thin, fine, smooth matter, between them they create a nourishing fine food for plants.

Thus farmers see how essential it is to mix sand and clay together: a two-horse cart-load of clay, upon every square perch of sand land, would change the nature of the soil to such a degree, that it might be called a loamy sand, which is the second best earth.

The above is taking in all sorts of clay and sand, as it speaks in general, because a mixture, let it be what sort it will, is valuable; but, however, there are different degrees of both clay and sand, and where we are so lucky as to find, on our lands, that which contains the most salts, it is the greatest treasure.

Most

Most marls are a sort of clay; and differ according to the colour and weight of salts contained in them.

According to the quantity of salts you suppose your marl or clay to contain, and the depth of soil or corn-mold you have to work in, so proportionably mix your marl or clay, and sand together.

The blue marl and brown marl are nearly of one strength; they are generally very hard to be dug; sometimes the labourers are obliged to use pick-axes, to loosen it with, ready for the spade.

These are good sorts of marl, and to be found in many places in England and Scotland, where they lie disregarded; owing to their owners not knowing their value.

When they come to be laid on the land, and exposed to the air, they fall to dust, and melt

melt with rain or frost ; any clay or marl that does this, is sure to contain a great body of salts ; for it is these that shiver and melt the earth about them, to come at the air, and the air at them.

A deep corn-mold, and particularly if sandy, will take about three cart loads to two square perches, at five yards and a half per perch.

The next marl in quality, and which is most suitable to strong land, is, white shelly marl, it generally lies under bogs and morasses ; it is light, but of a very rich nature, has a great likeness to lime, and, indeed, will almost go as far as flecked lime, in manuring ; however, it may be laid on, a cart-load to each square perch, without hurting the land, though less may do.

The next is a free-stone-marl ; it is white as lime, but has no shells in it ; it is most proper for clay ; it has a sharp acid spirit,
and

and therefore must be laid thin on the land; it is the worst of all marls.

There are three clays, the blue, red, and white; the best of these, for manure to sand-land, is the blue, as it comes the nearest to marl; but they will all melt, and open, when mixed with the sand.

CHAP. XXI.

On CLAY, SAND, and MARL.

THERE are several denominations of sands and gravel; of these the lime-stone-gravel is the best; it abounds greatly all over Ireland, except the county of Cork.

This is of a very rich quality, particularly if it be of the marly sort; in fact, it is no other than marl; only that it is mixed with a small blue lime-stone, from the size of a hassle-nut, to a good-sized paving-
ing-

ing-stone, which would all burn and make good lime: it is those that give it the name of lime-stone-gravel; it is a very valuable manure, and which contributes greatly to enrich Ireland.

A coat of this will change ling or heathy ground, to shamrogs or wild clover; it is to be met with in Scotland and England, in some places.

There is another sort of lime-stone gravel, which is of the gritty, sandy kind; but it is not so good as the above marly sort; it is suitable for clay-land.

There is a sort of sand in Ireland, that is also very good manure for strong lands; I have seen it in England, but never saw it made use of.

In fact, the English farmers are not so prying into the bowels of the earth as they ought to be, to find out these valuable manures: this sand is of a rough, round, gritty kind, a bluish cast; it abounds much

with salts : I have seen it produce amazingly great crops both of corn and grafs, for fifteen or sixteen years together.

Sea-sand is another good manure, where farmers are situated conveniently, so that carriage will not bring it too high.

The red or blue sand, that lies on the surface of the earth, in many parts of England, and such as we raise corn in, is no manure, except to clay land, as above observed ; and it is on such land as this that clay is so valuable, where marl cannot be got.

Chalk is an excellent manure for clay-ground, and will last many years ; it is good for sand, but not of that value as for clay.

What adds to the value of chalk, clays, or marl, as manure, is their lasting so long in the ground.

OF HUSBANDRY. 131

If land be well covered with any of these heavy manures, it will shew their value by throwing up good crops for ten or fifteen years.

Such bodies of manure are very ponderous, and therefore generally keep sinking till they get below the plow gate to turn up : when this happens, it should be trench-plowed.

The best method of liming, marling, claying, or chalking land, is to lay those manures on the sod : and let them remain (after being spread) for one year or two before the land is plowed, in order that they may adhere, grow, or incorporate with the earth, which will make them much more valuable and lasting. Besides, the air operates more violently and quickly upon them, by their being exposed, which, if they were covered with earth, they would, in some degree, be screened from ; and it is the air that causes them to open and shiver to

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pieces,

pieces, and ferment with the corn-mold, as will appear more fully in the next chapter.

C H A P. XXII.

On the weakest and worst of all SANDS, or worn-out or tired EARTH; how to make MARL or CLAY unite thereto, &c.

AS I have seen a bad, blowing, white sand in many parts of England, and particularly in Norfolk, which has baffled all the Norfolk-farmers boasted management to improve; I shall bestow a chapter on this sort alone, and shall think my time well spent, if I can put them in a way to make such land useful, as at present lies useless and neglected.

There are two sorts of what we call blowing sand, viz. white and grey, which is of
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OF HUSBANDRY. 133

a very smooth, fine grain, and destitute of any clayey, oily, or glutinous substance to hold it together, or for plants to feed upon.

Among the many tracts of this sort, in England, I shall mention one which lies round Thetford in Norfolk. Though the Norfolk-farmers imagine themselves superior to any other for management, yet they confess themselves not qualified to improve this sort of soil; and the reason they give, is, that it is so poor and weak, that marl or clay will not unite therewith, of which they have great plenty under these beds of sand, in most parts of Norfolk.

I was told of a farmer near Thetford, who was noted for being a better manager than the rest of his neighbours; I went to view his crops, and was agreeably surprised to see about two hundred and forty acres of barley, that was extremely good, in the midst of a very sandy, barren country; in short, one acre might justly be deemed

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as good as any of the best two I saw in the country; the crop might be judged to produce forty-four bushels an acre, upon an average.

This farmer had been brought up a shop-keeper, and had taken this farm a few years before, to the no small diversion of some of the bigotted farmers about him, who hoped to see him break, for his presuming to be a farmer,

He was a rational, sensible man, and laid his plans upon reason, and not upon old customs, which are very prevailing amongst the illiterate, however absurd.

The rent of the farm was two hundred pounds a year, for which he had perhaps about twelve hundred acres of land, some part of which was valued at five shillings an acre, and others at little or nothing.

His chief improvement consisted of marling on the sod, for the land had been a sheep-

sheep-walk for many years; it had been plowed formerly till they could get no more corn, and then left to chance. It had been, perhaps, twenty or thirty years in coming to a thin sod, which was scarce then sufficient to keep the wind from blowing the ground away; and though the sheep were small, two acres would scarce keep one of them alive.

His crops consisted chiefly of barley, rye, turnips, and clover; he had a little wheat on his best land, that had been strongly marled.

He marled upon lay, though most farmers in Norfolk marl upon fallow, or broken ground, this is the rock they split upon, where they use it at all. But, indeed, marl is much neglected in Norfolk; I do not know a county in England, that is more capable of improvement by marl, than this, were they to apply it with judgment.

The fact is, the country is mostly under tillage of barley, clover, rye-grass, and
K 4 turnips;

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turnips; the clover and rye grafs feldom lie above one crop, or at moft two, before they break it up again for turnips; therefore they are neceffitated to marl upon broken ground, except they would lay it upon the clover-ftubble as foon as the barley is off; which, by the by, is the beft way, though they have not the leaft notion of it.

Were they to do this, the ftubble would keep it up, till the young clover grew through, and united and incorporated it with the fod or corn-mold; the froft would alfo fliver and temper the clods, and bring them to a feparation; this is one great reason why all clays or marls ought to lie on the fod, a year or two, expofed, and to unite therewith.

But, on the contrary, the Norfolk-farmers lay it on a loofe, fine, weak foil; there it is in clods, tumbled about with the plow, in the courfe of the fallow; and as it is a clofe, heavy body, it is
generally

generally covered and screened from the air by the corn-mold, so consequently as the mold about it is a dead inactive body, having no moist, or oily matter, such as grass or clover-roots, amongst it to incorporate, or raise into a fermentation; I say, for want of these assistances, the dead, weak, light body of sand, or corn-mold, has not sufficient strength to adhere or unite with the heavy body of clay; therefore the two parties lie each inactive in itself.

This evidently shewed itself to be the case between the above farmer's good crops, and his neighbours starved bad ones; many of which were scarce worth reaping, which had been marled on the fallow, though the marl and land were all of one nature; therefore, it was plain that his superiority of crops proceeded from no other cause, but that of being marled on the sod; the roots of grass, or other vegetables moisten and unite the two bodies of earth; and its acid and nitrous nature causes a fermentation, which is productive
of

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of a mixture and union, that could never take place between two such dead and inactive bodies, as the sand and marl are alone in themselves.

If it should be alledged, that the freshness or rest this grass-land had got, by lying so long dormant, or in a sheep-walk, was the cause of so great a produce in the crops; such a supposition is answered by several experiments, that were tried in the same sort of ground; nay, the same sheep-walk, which neither hedge nor ditch parted, viz.

That all the farmers, except he who had the good crops, break up their grass-land by fallow, and sow it with turnip-feed; and two or three farmers, particularly, had marled upon the fallow, but their crops were not half so good as his, which was marled on the sod; and, upon turning up earth, it was easy to discover the marl lying in lumps, in the same inactive state as when lain on; this was also the case with all the old going corn-land in the neighbourhood,

hood, which had been marled in the course of tillage. But, upon repeated trials, they find it does not answer, therefore seldom marl at all.

It is a prevailing opinion, and a common saying among them, that their land is too weak for marl, that the marl and sand will not mix or unite together.

An open town-field lay next to the two hundred and forty acres of good barley, the owners of which had several ridges mixed among his neighbours in that field, several of which he had marled upon fallow; but had no better crops on these, than the rest of his neighbours.

All these circumstances proved, beyond a contradiction, to the opinion of the farmers there, that marl will not answer with them, but upon grass land, which had only been lately tried; for the two hundred and forty acres of good barley was the first instance, and fourth crop after marling.

It

It is worth observing, that this sensible farmer foresaw the success which would accrue from marling the said land on the sod, as he took a lease of the farm at double its former rent, though several people had been broke on it; but he, on the contrary, was making a fortune; for the crops I saw on the ground, were at least worth ten rents.

He had better turnips than any one else; which enabled him to keep a large flock of sheep; he kept every thing as private as he could, and desired me to take no notice of what I had seen; for which reason I suppress his name.

Many farmers looked upon his crops with wonder, and a longing eye; but partly despaired of making his case their own; as his land had been so many years coming to a sod; and theirs was chiefly broken land.

OF HUSBANDRY. 141

To sum up what has been said, all the above observations, as well as reason, prove clearly, that, marl is a treasure, when found and applied properly to light sandy land; but yet the same observations prove, that it cannot be applied with success to weak, worn out land, without some sort of vegetable or grassy particles, to bear up the marl, putrefy, keep moist, and cause a fermentation, in order to mix or unite the two bodies of sand and marl together: and as it is generally worn out corn-soil, that stands in the greatest need of improvement; and as it is also very disheartening for farmers, to wait so long for their land coming to a sod for the said purpose of improvement; I refer them to the next chapter, where they will find artificial management will make up for deficiency of time and nature.

So much as this chapter contains, I thought necessary to say, in order to prove, both by reason and precept, the necessity
there

there is for the farmer's keeping up to the rules laid down in the next, for the improvement of his land, and consequently of his crops also.

C H A P. XXIII.

On different Sorts of GRASS and PULSE, which must be sown before Marl is laid on broken, old-going, fandy, worn-out Lands, for the improvement thereof, &c.

SHOULD the reader happen to turn to this chapter, before he reads the foregoing one, I would advise him to turn back, and read it first; in order that he may more fully be acquainted with the reason why I direct, or lay down the following management.

There are few fandy farms in England, but what have beds of marl or clay under one part or other of them; did the owner but apply himself for finding them out.

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The first step he should take, is, to view his hedges and trees, as their aspect of vigour, or runtishness, generally shews the sort of ground they grow upon : as for instance, all tap roots thrive best, where the interior earth is good, though at a great depth under; particularly oak; it strikes its root perpendicular to a great depth to find out nourishment; and if a good clay or marl be under, at the distance of fifteen or twenty feet, the flourishing state of the tree will shew it, by rearing up its head high in the air.

One can hardly be deceived in this remark: for though the surface appear sandy for miles round, yet, if there be any good oaks growing thereon, we may be assured that either a good clay, or marl is under; therefore the farmer may apply himself to a diligent search, near the said trees.

What he wants being found, his next method to take, is, how to apply it to his ground;

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ground ; and if his land be of ever so poor, light, sandy nature, the following method will enrich it, viz.

As soon as the crop of corn is off, plow the land once, and sow it with vetches pretty thick ; then harrow them in ; if this can be done a fortnight before Michaelmas, the better ; that the Michaelmas-spring may push them forward to a good head, before winter ; and though the land be ever so poor, open, or sandy ; if sown at this time of the year, it will produce a crop of straw, though, perhaps, it would not have strength enough to support a crop of corn ; but straw will answer his end.

The vetches must not be eat ; but, as soon as the bushy spring feed-time is over, the farmer must prepare for marling, or claying upon them, viz.

He must first roll the vetches flat, with a roller, so far as he thinks he can cover with marl the same day ; but no farther ;
and

and also spread the marl even the same night, so as to cover all the vetches close therewith, to prevent the sun or weather from exhaling or drying out the juicy substance, which it soon will do from any part that is exposed thereto.

When marl, or clay, is first drawn out of the pit, it is generally wet and tough; but when it has lain a little exposed to the weather, it shivers and falls to powder, particularly if it be of a rich sort, for then the air opens it, to come at the salts it contains.

As soon as you see that the clods are come to a consistence, so as to break and spread, draw a harrow over the marl, turned the wrong side up, in order to break and spread the marl more even; and cover the vetches close.

The next consideration is what to sow it with; and doubtless your choice will fall upon such as suits your stock of cattle, or your opinion of farming, and crops the

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best;

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best; but, was I to chuse, it should be sown with turnips at Midsummer; however, whatever it is sown with, it must not be stirred with the plow; but, as soon as the marl is levelled on the ground as above, sow the seed, and shovel the furrows, and spread the mold you throw out an inch thick all over the ridge.

If you cannot get mold enough without, you must either dig a spit deep, or run a plow up and down the furrow, in order to raise mold sufficient for the purpose.

Two men will shovel an acre in one day, which is cheaper than plowing, and the work is done effectually; the marl lying between two bodies of sand, and the vetches being reduced to dung under the marl, that causes a thorough fermentation and union amongst them.

If you eat off the turnips with sheep, in the moving-houses, you complete an effectual improvement; be the land ever so poor
or

OF HUSBANDRY. 147

or sandy; in short, this is the best method that can be taken to improve any sort of barren, light land, by marl or clay.

If clay-land, it will answer the end, by applying sand upon it in the same manner; only with this difference, that instead of vetches you sow grey peas, which will produce a greater burden of haulm for manure.

Roll your pease; and, when your sand is laid on, cover them, and the sand together, by shovelling the furrows as above; but the deeper you cover, the better. Suppose you dig or plow a good spit deep, and make a furrow two feet wide, to throw over a ridge sixteen feet wide.

This is also an excellent method to cover in buck-wheat, vetches, or pease, or any other crop that is sown for manure; suppose you would not lay on any sort of sand, marl, or clay.

As for instance; if you would sow wheat at Michaelmas, you must first sow your pease the latter end of May, or beginning of June: at Michaelmas they will be in full blossom; then roll them flat, and sow your wheat upon them, and trench the furrows as above, covering the seed and pease together, two or three inches thick. These pease, being covered, or smothered in their most juicy tender state, ferment and rot very soon; they will be turned into a mass of manure in a fortnight, at which time the wheat begins to strike root, and feed upon the ground.

This is a very sure method of getting a good crop, be the ground ever so poor, as the seed takes root immediately among the manure.

This also effectually destroys the weeds; and as the furrows are deep and open, it is a good drainage for cold, low, wet land; in short, it is the next best method to trenching,

ing land, and, for the first crop, perhaps, may exceed it.

It is likewise a good preparative for such land as may be thrown into the course of trench-plowing, as the furrows are ready open, &c.

Any spring-crops may be treated in the same manner with good success.

Six men may trench an acre thus in one day, and cover the ridge three inches thick; but if the mold be loosened with the plow, so that nothing but the shovel will want to be used, it will come much lower.

C H A P. XXIV.

The Management, &c. of the white and blue boiling P E A.

THIS sort of pea is chiefly raised for the food of mankind, and is used for puddings, &c.

L 3

It

It is only here and there we can meet with land suitable for this crop : for though it may produce a full crop, and good-looking pease ; yet, if the land be not natural for them, they will not boil soft ; in which case they are of no value, but for cattle.

The land most likely to answer for them, is a dry sharp sand, or gravel ; but experience must be the farmer's guide herein ; for, if two pieces of land be both alike, to a man's thinking, and only an hedge parts them, yet one may bring a soft good boiler, and the other not.

The season for sowing it is about the middle of March ; it must be managed in every respect, as the grey pea ; it is generally sold for about the same price as wheat.

I have known, more than once, twenty pounds an acre made by a crop of them ; besides, the crop is generally early enough
reaped

reaped for the land to sow turnips on the same year; which is another great advantage: cattle do not like its straw so well, as that of grey pea-straw.

There are two sorts of this pea, but both nearly answer the same end; and the land that will produce one a boiler, will not miss in the other; one is called the blue boiler, being of a bluish cast or colour, and very small and round, and without any dints in it.

The other is called the white boiler, and is generally a little larger than the blue sort; this is also round, and is not dented; it is not quite so much valued as the blue sort.

They are both of the early hotspur-kind; the seed must be changed every year to chuse; and that which comes from the South of England is generally the best, the land being, in that country, a very warm, sandy gravel: the farmers raise great quantities

ties to send abroad, and find their account in it.

C H A P. XXV.

The Management and Perfection of the
grey FIELD-PEA.

THERE are two sorts of pease which may be cultivated in the field with success.

First, the common grey field-pea, raised for the sustenance of the brute creation, answering the same end, or made use of for the same purposes, as field beans.

The next is a boiling pea. I shall treat of it in another chapter.

The grey pease delight most in a light gravel, or sandy land: but, if sown with beans, (which will be a rodding for them) they will grow with success on strong lands;

OF HUSBANDRY. 153

lands; but the richer the land, the greater need they have for support, as their straw grows longer, and therefore they must be sown thinner also.

Sow the poorest land you have, with pease, as they will enrich the land; and on such poor land, they corn best; for when the land is too good, they run too much to straw; and, the more straw, the less corn.

Oat or barley stubble, if the land be poor, will bring a good crop, provided you give it a couple of plowings in autumn, and winter; but if the land be in a good heart, you need only plow the stubble in, just before sowing.

They may be sown with success, from the first of February to the first of April; but about the beginning of March, is the best season.

The land being plowed, sow the pease at the rate of eight stone to the acre, Irish measure:

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measure: when sown, water-furrow and grip the land.

This crop must not be rolled; in May is the time to weed them.

Pease are ripe for reaping, when they turn black-eyed within the pod.

If they happen to be a short standing crop, they may be mown; else they must be reaped, and rolled, or lapped up in round little bundles, like a sheaf of corn: thus they must be left, in single lumps or sheaves, till they are enough weathered, and dried for stacking, or housing; but, while they are on the ground, they must be turned two or three times, lest the under-part of the sheaf grow.

C H A P.

C H A P. XXVI.

Directions for the plowing, sowing, and management of BUCK-WHEAT, through all its Variations.

THE chief use of buck-wheat, in England or Ireland, is for manure; tho' some make use of it for bread; but it is very ordinary bread, not much better than that of pease; it will feed hogs; but pease are full as good, and will yield more corn on an acre: besides, they are a surer crop, as they will grow on almost any sort of land.

I will say so much, however, for buck-wheat, that where it hits and is a full crop, it is the finest thing for manure that I have ever seen.

I once had a crop, that, when it was rolled down, gave a task to a horse to walk through it; and the land gained so
great

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great advantage from this dressing, that the proprietor has good reason to remember it.

The plant is very luxuriant, and predominant over any weeds; so that the benefit does not wholly lie in the dung it makes, but partly in its being an effectual clearer of ground from weeds.

The land that suits it best, is, that of a light soil, of a sandy gravelly nature, tho' in truth, (except a very strong clay) any land will bring a crop; provided it be well tilled to a fine mold.

Any sort of stubble that is intended for it, must be winter-fallowed, plowing it early in autumn, in order that it may meliorate with the frost, &c. and again, as soon as it begins to shoot in the spring, and the last time in April, just before sowing.

The middle of April, is the best time for sowing it.

When

OF HUSBANDRY. 157

When plowed, before it is sown, harrow it once in a place; in order to level it, that the seed may not be buried too deep; then sow the seed, at the rate of two bushels to an English acre; after which, harrow it very fine.

When harrowed, roll it; then you have no more to do with it, till it is fit to plow in, for dung, which is, when full in blossom, about Midsummer.

This is done by first rolling it down the striping way of the plow; and then plowing it in.

If the land be for turnips, as soon as the dung is rotten, (which it will be in about ten days), if it be plowed in the fulness of sap, or juices, plow it up, and harrow it once in a place: a man must follow the harrow, with a rope tied to it, to shake it, lest it drag the dung in heaps. Being thus harrowed, sow the turnip seed, and roll it afterwards.

But

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But if the land be for wheat, let it lie unplowed, till the grass or weeds begin to grow, then plow the dung up, and, in a proper time after, sow the wheat, and plow it in with the dung.

If you intend the buck wheat to stand for feed, treat it in every respect, like pease; as it is harvested the same way.

C H A P. XXVII.

Directions how to raise RAPE and COLE-SEED; and also how to manage BURN-BEATING, &c.

I Shall treat of these two seeds under one management, in the same chapter, as they are nearly of one quality; all the difference is, that cole-seed requires a greater depth of soil.

Rape

OF HUSBANDRY. 159

Rape and cole seed are very profitable, where they meet with land that suits them; which is a black and deep soil; cold, rushy bottoms, bog, or deep mountain are very good, provided it be duly pared and burned.

For paring and burning, (by others called burn beating), take heathy, boggy, mountainy, or rushy, wet and cold low ground; the more ling or heath, and coarse grass, the better.

If it be for reclaiming of bog, follow the directions under that article.

If the ground be deep, and will allow it, pare a sod two inches thick, in order to raise all the ashes that is possible; but before you begin to plow, or pare for burning, take a roller six feet long; in this fasten three belts of iron, quite round the roller, at two feet distance; these belts, or rather cutting knives, as they are to perform this office, are about the breadth of a scythe,
and

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and are to have prongs, to drive into the roller, so that the edge will stand upright.

With this, go across the ground intended to be pared; which, when pared, it will turn up in fods two feet long, and save a great deal of labour of cutting by hand; the knives may be taken off, or put on occasionally; and the roller will serve for other uses, or rolling corn, &c.

About the middle of April, begin to pare; and do not miss an opportunity of burning the fods, when once dry; which will be in three weeks after cutting, if the season be not wet; but, in a wet season, they must be set upon an edge, and they will dry the readier.

Being thus dry, and ready for burning, make heaps of about a cart-load in each, with the grass-side downward; lay them as light and hollow as possible, that they may burn the readier.

Put

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Put some sort of kindling under, to set it on fire, such as straw or sticks, &c. but little will do, if there be any rough stuff, such as heath, rushes, &c. on the fods.

The way to burn it to the greatest advantage, is, not to let the blaze break out, but keep it smothering within; for the more it blazes, the more of the nitre ascends into the air.

Being thus burned, spread the ashes, and plow them under, with a very thin furrow, at the most not above two inches thick; then harrow it, and when harrowed pretty fine, sow the seed. After sowing bush-harrow it.

A peck of seed is the due for an English acre, which is about one third less than an Irish one.

Take care to water-furrow and grip it well.

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In the spring, weed it; and where it is too thick, pull up some plants, and transplant them in thin places, if any there be; if not, throw them away.

Some will hoe the rape; but I take this to be a superfluous piece of labour.

The most famous place in England, for rising this crop, is, in the fenny countries; and they never hoe any; but I have seen farmers, in other countries, take great pains in hoeing it; but this may be partly owing to their being strangers to the right management, and to their taking over-abundant pains, through a fear of not doing enough.

The chief thing is, to sow it even, and till it well; there is, then, no fear of a crop; for the plants, coming up thick, and having a broad leaf, smother the weeds, cover the ground, and keep it light and mellow; so that, in this case, I see but little need of hoeing.

I had

OF HUSBANDRY. 163

I had a field one year, and in order to be satisfied which was the best way, I sowed a piece in drills, and hoed it with the plow; and another piece I hoed by hand.

I did not thresh it separate; but, in all appearance to the eye, there was no great difference, or, at least, not in any wise equivalent to the labour it cost me; but, in fact, it was all as good a crop as could well grow.

Where there is not burn beating, a good crop may be got by summer-fallow, managed directly, in every degree, as for wheat, with the same manures.

One advantage in sowing rape is this, that the seed costs a trifle, perhaps not above eighteen-pence an acre; and if it hit, it is a valuable crop; and should it miss, the loss of seed is insignificant; and the land can be sown with barley at spring; as there

spring; as there is time enough to discover what kind of a crop the rape will be, before barley-feed time.

Observe, that it is ready to reap, when the upper branches turn brown; be sure you let it not be too ripe; of the two evils, the least is, to reap it too soon, rather than let it stand too long; for if the pods be too dry, they will open in reaping, and shed the seed.

Birds of all sorts are very fond of it; therefore it must be watched, for a month before its reaping, to the end of threshing; it is not altogether the value of what they eat, but in opening a pod, perhaps they will not get above one grain, and all the rest will drop out.

It is reaped in the same manner as wheat; but the handfuls are laid singly, and light, upon the stubbie, behind the reapers; thus it must lie without stirring, till it is ready

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to thresh; which will be in about three weeks after reaping; for it must be very rash or dry; or there will be a loss, in its not threshing clean.

When it is thus ready for threshing, prepare a floor in the middle of the field, (or in any other place most convenient for the carriage,) by levelling the ground, on which must be spread a large reap-cloth, in the nature of a winnow-sheet, to thresh the rape upon.

Spread the rows round, and thresh round.

One man spreads before the threshers; another turns it after them; a third shakes off the straw; and a fourth carries it away.

These four men are to supply six threshers, and four carriers in; with four to fill the sheets, and one to rake off the pulse, and riddle them.

These

These set of people, being in all nineteen, will thresh six or seven acres in a day.

It is better to proportion the labourers, according to the quantity of rape you have; that it may be dispatched in a day or two, as rainy weather may prove obstructive; but if the rain should happen to catch you, throw up the corners of the cloth, and cover it with pulse, such as stays in the riddle, which will turn off rain extremely well.

There is no need of taking the seed off the cloth; but keep threshing upon it, till all is done.

Some will sell the seed to the oil mills, as soon as winnowed from the cloth; others, that do not want money, will heap it upon the floor, mixed with chaff, and covered up with the pulse; so that it will be round and sharp at the top, like a hay-cock; and thus they will let it lie, perhaps two months, till it gets a sweat in the chaff; which is very necessary;

cessary; for, being of a clammy oily substance, it would turn moldy, when clean, in a granary, if it did not get a sweat in the chaff, as above; but this precaution will prevent the said evil.

It is immaterial to say any thing about winnowing; as it is easily done by any one that can winnow flax-seed or corn; as it is only suiting it with sieves to the size of the seed.

The straw was thought of no value formerly in England, but rather a nuisance; but, of late years, the ashes it makes are found to be valuable for making soap; and the soap-boilers will buy the straw, perhaps two or three months before it is reaped, and will give from three to six shillings per acre, according to the quantity that may appear to be thereon.

About the latter end of November, if the rape be strong, so as to bear eating, (which you may judge of by the strength

of the plant, or grossness of the stalk), turn sheep in, and eat it till Candlemas; provided you do not overstock it; but take care that they do not eat the stalks too near; they ought to go no further than just to eat the leaves off, without entering on the body of the stalks, for fear of wounding them too deep.

Cole-seed may be eaten a great deal faster than rape, as it produces a grosser stalk; and when all the leaves are eaten off, about Candlemas it makes fresh shoots, and produces larger heads than if it had not been eaten; and, if the land be good and deep, it will produce a more profitable crop than of any other grain whatever.

I have discoursed with several farmers in England, who know no other difference between cole and rape-seed, than the name.

It is true, that the seed is nearly alike; and no difference is made in the price to the

OF HUSBANDRY. 169

the oil-mills, as they produce one sort of oil; but there is a material difference in the plant, and it is the advantage of a farmer, to be well acquainted with it too.

The cole-feed is a species of cabbage, originally from Holland.

It produces a very large luxuriant plant, in good ground; it will produce a stalk like that of a cabbage, and the feed in proportion to the size of the stalk.

A very full crop will turn out a last on an acre.

When the sheep have eat the stalks bare, it is an easy matter to take them up, where too thick on the ground, and transplant them.

I once took as many superfluous stalks out of two acres, as transplanted six; which bore as good a crop as the rest, only a little later.

I am

I am certain, a very great advantage might be made in this method, in the manner following, viz.

It is to be observed, that land for rape or cole-feed is fallowed all winter, and till the time of sowing, which is the latter end of June, or in July; by which means the rape takes up the land this year, and till it is reaped, which is about the latter end of June the next year; therefore it is too late for sowing any sort of crop but turnips, when the rape comes off.

Now, suppose you had half an acre of good land, or made it so by dunging it better than common, and tilling it a little extraordinary.

At the proper season of the year, which is at Midsummer, sow on this half acre, one peck of either rape or cole-feed; but, if I was to chuse, it should be cole-feed.

Now,

OF HUSBANDRY. 171

Now, we suppose this to produce a very plentiful crop of plants, perhaps very few grains would miss : thus let them grow till Michaelmas; and suppose you have ten acres of either wheat, bare, barley, or oats; as soon as the corn is reaped, plow the stubble; let it lie a month or six weeks to rot, and then plow it again; this will be nearly as good as summer-fallow.

Begin at one side of the field, and plow a furrow; in this, set a row of these plants, a foot asunder, leaning against the side of the furrow; then plow another furrow against it, make the furrow about a foot broad; so continue, till all the field be set; but it is the best method to set them with the transplanting machine, as directed for wheat.

If the land be good, there will be no need of dung, &c. but if it be poor, have rotten dung in the field, ready laid in heaps; take baskets, and lay a little at
the

the root of every plant, about the size of a large potatoe will be sufficient; by this means, a little dung will go a greater way, and not any of it will be laid in vain, as every plant will have the good of it.

This is a mighty ready way of transplanting; for, except the plowing, it will not cost above two shillings an acre.

The plants will be the better for leaning on one side.

About March, if the mold be drawn up to the stems, they will be the better, though they may do very well without.

I do not doubt but there are as many grains in a peck of rape-seed as will set, at a foot distance from each grain, a hundred acres; therefore, without doubt, there will be as many plants to pick and chuse, as would plant ten acres at the same allowance.

When

When the rape is reaped, sow turnips.

This is getting three profitable crops, and part of a summer's fallow, in two years; and the two last crops are of an improving quality.

It is true I never saw this method put in practice by any other person. However, I made trial enough in this way to prove it valuable.

This experience, joined to the reasonableness of the thing, makes it clear to me, that a farmer, by this management, might make great profits of his land.

If it should be a busy time about Michaelmas, the transplanting might be deferred till the beginning of February, and keep the land fallowing all winter; and, indeed, I doubt not but this is full as good a season as Michaelmas, and the land may be kept fallowing, as I observed.

The

The spring-planting will drive the crop a little later; but I am convinced, that there is no doubt of the plants growing, from either season: it is my opinion, not above one in an hundred would miss.

I should be glad to see this profitable piece of husbandry put in practice, in a large degree, as reason speaks so clearly in its favour.

It would also make good winter-feeding, if the farmer did not chuse to let it stand to feed.

What a fine affair would it be for a farmer to make ten or fifteen pounds an acre of his stubbles; the land the better for it, and the expence not above three or four shillings per acre?

If it should miss, the loss is scarce worth notice, and the land will be the better for the fallow at any rate.

The

OF HUSBANDRY. 175

The middling produce of an English acre of rape is half a last ; it sometimes happens that an acre will produce a last ; but it must be very good.

Cole-seed will very often produce a last ; being a stronger plant, it consequently throws out larger feeding branches, where the land is deep and proper for it.

C H A P. XXVIII.

General Directions for plowing, sowing,
harrowing, and mowing, or harvesting
BARLEY.

IN October, begin to plow your land for the winter-fallow, which is intended for barley, except turnip-land, which must be plowed as soon as the turnips are eaten off.

Observe

Observe to gather, or raise your ridges high in the middle of your winter fallow, by which means it will keep itself dry, so that it may be plowed any time in winter; and the more it is plowed, the better and richer it is made: take care that your land be got into sowing order by the first of March, as the best season for sowing barley, is from that to the middle of April, though some will sow till the middle of May; but a good deal may be owing to the season; for it is better to wait a month, than to sow in a dirty, cold, bad season; as barley is a grain, above all others, that will not bear inclemency of weather or hardship.

If you intend to lay your land down with any sort of small grass-seeds, such as clover, lucerne, &c. as soon as the barley is sown and harrowed, as above, sow your grass-seeds, and harrow them once in a place, with the harrow turned the wrong end foremost, that the pins do not sink too deep, which would bury a great deal of these small seeds;

seeds; but larger sorts of grafs-feed, such as faintfoin, burnet, and the like, may be sown, when the land is about half harrowed for barley, and then harrowed along with it; by which means they will be the better covered; and, being a husky feed, they require it.

When the barley has been sown about a month, roll it.

Sow your barley immediately after the last plowing, and harrow it extremely well.

Six stone of seed is sufficient for an English acre.

One great article, on which the farmer's success depends, is, to keep his crop clean; he must therefore take care it will be well weeded, and throw the weeds into the furrows; being thus cleared from weeds, the business is over, till ready for harvesting.

As most persons know when it is ripe, I shall only say, that the chief token is, to observe the joints of the straw; when these turn from a green to a dry straw-colour, it is ready for cutting; but no corn is ripe, as long as the joints are full of sap; for those are the juices which supply or feed the grain with its last nourishment; as it keeps feeding or filling, until the joints are sucked dry; and then the green cast departs along with the sap, and nature has done its work; therefore fall to, and mow it, as directed in the next chapter.

C H A P. XXIX.

On mowing and harvesting SPRING-CORN.

WHAT may be properly called spring-corn, is, that which is sown in spring; such as barley, oats, beans, pease, buck-wheat, and the like.

These

These are what the English farmers call mowing crops, which is done by a cradle on the scythe; or, for want of this, a hoop, made of a strong brier, fallow, or the like; the root-end of which is fastened in a hole, made by a spike-gimlet, in the shaft, about eighteen inches from the heel of the scythe; and the top end of the stick must be brought with a bend over the heel of the scythe.

The hoop must be crossed several times, with a cord, like net-work, in order to keep the corn from falling through.

Upon trial, experience will teach him farther.

The mower being thus equipped, let him begin to mow, leaving the standing corn on his left hand, that is to say, he must leave the swarth leaning against the standing corn; and if he is a dexterous workman, he may

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leave it so even and straight, that a cross straw will scarce be seen.

After each mower, comes a gatherer, with a reaping hook, or a small rake, to make it into sheaves.

The complement, for every two mowers and two gatherers, is, one binder; sometimes, when the corn is rank, or a heavy crop, the two gatherers will have a band-maker between; and these five or six persons day's work to mow, gather, and bind, is, four English acres of fair standing corn, either barley, beans, blendings, or oats.

Being thus bound, it must be set up in stooks; the sheaves propping against each other, press the tops well together, in order to make them thin and sharp; which will shoot off the rain the better.

The farmers, in England, seldom put any covering sheaves on their barley-stooks; but leave the corn-ends exposed to all weather; believing

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believing that the corn hardens the quicker, and more kindly; however, as Ireland is a wetter climate, I would advise the farmer to cover them at night, and uncover them in the morning.

After stooking, the barley-stubble must be raked with a swarth-rake; so called from the length of its head, which is six feet, to take a swarth-breadth at a time.

It has one row of iron-pins, each pin eight inches long out of the wood, and three inches asunder.

It has a handle, in proportion to the rest of the rake, in which is fixed a belt, to go about the man's shoulders, to draw it in the nature of a harrow.

When he finds his rake full, he must lift it up, whereupon the corn drops out; he then goes on again, always leaving the corn in the same place or range, in the nature of a wind-row.

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When the field is raked, cock the rakings like hay ; and this is very useful to lay on tops of the field stacks ; as it will lie better than sheaves, and shoot the water off ; but, in England, they never stack their corn in the field ; but let it stand in the stook, till it is ready to take home, to the barn, or hag-yard.

However, as Ireland is a moister climate, I believe it is a very good way, particularly if the corn is to be housed.

And perhaps, if England was to do the like, it might be better ; as it would put the corn out of danger of bad weather.

N. B. Spring corn, such as barley, oats, beans, and pease, are all harvested the same way by mowing ; therefore, I shall refer my reader, for directions on those heads, to the foregoing instructions.

The

OF HUSBANDRY. 183

The Expence and Profit arising from an
Acre of BARLEY, sown after TUR-
NIPS.

To eight quarters, at 20 s. per l. s. d.

Total produce	-	-	8	0	0
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To two plowings, if only with one

men and two horses	-	0	5	0
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To harrowing, sowing, rolling,

and water-furrowing	-	0	3	0
---------------------	---	---	---	---

To chance of weeding	-	0	2	0
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To feed	-	0	5	0
---------	---	---	---	---

To mowing	-	0	1	0
-----------	---	---	---	---

To gathering, and binding	-	0	0	6
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To raking with a swarth rake	-	0	0	4
------------------------------	---	---	---	---

To stooking, carriage home, and

extraordinary attendance	-	0	4	6
--------------------------	---	---	---	---

To carriage to the market, and

expences extraordinary	-	0	6	0
------------------------	---	---	---	---

To land-rent, upon a par	-	0	15	0
--------------------------	---	---	----	---

Total expence	2	2	4
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Clear profit	5	17	8
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NOTE. The straw pays for threshing.

The Expence and Profit arising from an
Acre of BARLEY, by proper Fallow.

	l.	s.	d.
To eight quarters of barley, at 20s. per barrel. Total produce	8	0	0
<hr/>			
To ten plowings, by one man and two horses, at 2s. 6d. per	1	5	0
To sowing, harrowing, and rolling	0	3	0
To feed - - - -	0	5	0
To chance of weeding - -	0	2	0
To mowing - - - -	0	1	0
To gathering and binding -	0	0	6
To swarth-raking - - -	0	0	4
To stooking, carriage home, and ex- traordinary attendance -	0	4	6
To carriage to the market, and other expences - - -	0	6	0
To two years land-rent -	1	10	0
<hr/>			
Total expence	3	17	4
<hr/>			
Clear profit	4	2	8

The

OF HUSBANDRY. 185

The Expence and Profit arising from an
Acre of BARLEY, when sown after the
common Husbandry.

To six quarters of barley, at 20s.	l.	s.	d.
per - - -	6	0	0
<hr/>			
To two plowings with four horses and two men - -	0	10	0
To harrowing and sowing -	0	3	0
To seed - - -	0	7	6
To weeding - -	0	3	0
To reaping and gathering -	0	6	0
To stooking carriage home, and ex- traordinary attendance -	0	3	0
To carriage to the market, and ex- traordinary expences - -	0	5	0
To rent - - -	0	15	0
To lime or other manure -	2	0	0
<hr/>			
Total expence	4	12	6
<hr/>			
Clear profit	1	7	6

C H A P.

C H A P. XXX.

Remarks on the foregoing TABLES.

I HAVE been the more particular in laying down the three foregoing tables on barley, that the farmer may, at one view, see that which affords the most profit, that he may be induced to copy after it, for his own and the public good. And it appears very plain, from the said tables, that there is no profit equal to that which comes after turnips; and particularly when he considers how easily a crop of turnips is got, and also the profit arising therefrom, as appears by the said table.

The next to turnips in profit is that of fallow, as from it we are sure of a full clean crop; and that, without any other manure than what the air and weeds produce; which, indeed, is the richest of all others, as may appear by what I have said on those heads.

C H A P.

C H A P. XXXI.

On five different Sorts of BARLEY.

FIRST, sprat or battledore-barley.

Secondly, long-eared barley.

Third, round-eared summer-barley.

Fourth, round eared winter, or, by some in England, called big; but its true name in Ireland, is bere.

Fifth, six-rowed barley.

Were I to add a long chain of names, (as is usual with some authors) it would be swelling my work into a useless chit-chat, as every name that is added to those, is only explaining the same thing over again; for it is the different language, or rather gibberish of different kingdoms or counties, which gives rise to so many names for one sort of grain.

This

This may well confound the ideas of a farmer, who does not know how to account for all the names that are given to the same sort of grain. May not this lead him to seek, under a disguised name, for the very seed himself has growing?

It is true, different land and tillage will, in some degree, change the form of seed, as to a thick or thin skin, a small or a large size, or the like; but the species is yet the same.

The sprat or battledore-barley, has only two rows of grain; for which reason the ear is flat; the corn is short, plump, and thin-skinned, not inclined to have a long gross straw, (but indeed this varies according to the richness of the ground it is sown on) it is said, it will grow best on light sandy land, but I know it will grow well on many other sorts of land.

I have had great crops on tough, strong, cold clay, or gravel-land; but such must be

be well pulverized, sweetened, enriched, mol-
lified, and warmed by tillage.

Manures, on such land, will not do for
barley, unless the cold four nature of the
ground be changed by tillage.

The manure which ascends and descends
from the clouds, is of a warmer and earlier
nature than any other; therefore it will
produce the earliest and thinnest-skinned
crops.

The long-eared barley is so called from
its having a long ear, by which it may
yield more corn under the flail; but the
grain is small and long, and has a thick skin;
it delights in much the same land and tillage,
as sprat-barley.

Round-eared summer-barley is an excel-
lent good yielder; it is a middle species be-
tween bere, or winter-barley, and sprat-
barley; and therefore must be sown early in
spring.

The

The lands of Ireland, Scotland, and the North of England, are very suitable for it, provided they be well tilled. It has also a plumper, fuller, or bolder grain than bere, though not, in this case, equal to sprat-barley.

It is not so delicate or tender as sprat-barley, neither is it so hardy as bere; indeed, it is my choice, next to sprat-barley, for almost any sort of land which is proper for barley-crops.

Bere, winter-barley, or big, is best known in Ireland, or the North of Scotland; and, indeed, by their tillage, it is most fit for them.

I have held several arguments with Irish farmers about this grain, and I generally found the strength of their arguments to hang upon prejudiced old customs, believing as their forefathers sowed it, though in darker days of improvement, that they would not be right, if they did not follow their
steps;

OF HUSBANDRY. 191

steps; and in short, it is as hard to shake their resolution from the pursuit of this their favourite grain, as from being drunk by the whisky or spirit it makes.

This bere is generally sown at the same time with wheat; and though slovens sometimes get good crops, perhaps chiefly from the strength of manure, (as they mostly sow it after potatoe-crops, or on their rankest land, which would in fact bring onions) yet, I observe, those who manage better, have, in general, better crops; and bring it nearer to the resemblance of barley, for plumpness, but, at best, it is far short of barley in value, insomuch that it would hardly be sold in the English markets at any price, except for hen-corn.

It is a poor, long, small grain, with a thick skin; but, notwithstanding this, it is not without its good qualities, where it is used in its proper place.

It

It is to be observed, that the poor of Ireland live about eight months out of twelve on potatoes.

A potatoe-garden, for a poor family, is generally about half an Irish acre; they keep no team; therefore cannot till the potatoe-stubble fit for a crop of barley; for it is to be observed, that there is no more of the ground stirred, than what they throw out of the trenches to cover the potatoes with.

The bed on which the potatoes grow, lies unmolested till the third crop; therefore, when they dig the potatoes, they sow the bere, and shovel up the trenches to cover it, which is all the husbandry it gets or wants.

But such husbandry would not do for barley; therefore, in this case, it may have the preference.

C H A P. XXXII.

On different Sorts of Land for BARLEY.

BY dint of plowing, good husbandry, and rotation of crops, almost any sort of land may be brought to produce barley; however, some is better, or more suitable for this crop than others; therefore I shall begin with the best first, and go regularly on to the worst, which shall be placed last, viz.

First, loamy sand.

Second, loamy gravel.

Third, chalky land.

Fourth, sandy land.

The above four sorts, by nature, will produce a long ear, and short straw, a plump, stout grain, and thin skin, which is certainly of the best quality.

Fifth, loamy gravelly land, that lies over limestone.

Sixth, warpy land.

Seventh, black halle earth.

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O

Eight,

Eighth, strong clay-land.

Ninth, black mountain-land.

Tenth, black, deep, moory-bottom-land.

The last six sorts of lands, generally, produce a long straw, and a small ear, a long small grain, and thick skin; but may be helped greatly by tillage, sowing thin, and particularly if the barley follow turnips; as they, in all cases, are an excellent preparative for this crop, and deserve to be made a more general choice of.

C H A P. XXXIII.

On the Management of RYE, both for Winter-feeding, and a Seed-crop.

THE management of rye is very simple and easy, which few words will explain.

A farmer,

OF HUSBANDRY. 195

A farmer, having stubble-land, particularly if of a warm sandy nature, would wish to have it under profit the winter half-year; let him plow it, as soon as the corn is reaped; begin in the middle of the ridge, and gather or take it up, that it may lie very high, and dry; this done, sow two bushels of rye on an English acre; harrow it in; and by being thus early sown, the Michaelmas-spring will push it up so forward, that it will be mid-leg deep by December; but though it may be a full eatable crop by this time, yet the best way is not to turn cattle upon it till spring; then the scarcity of other herbage will make this more valuable.

You must eat it off, time enough to sow such a spring-crop as you intend; but barley is the most suitable, as it will bear to be latest sown, and therefore will give the rye more time to be eat off.

If you would have your rye to stand for seed, there are two seasons; for sow-

ing it, namely, at Michaelmas, and in February.

The large winter-rye must be sown at Michaelmas, and the small spring rye in February. Six pecks of seed are enough for an acre. You must cover it with the harrow.

This spring-rye is sometimes made use of amongst the English farmers, if a crop of wheat should miss, to sow in its place.

In spring, roll your rye, (which you intend to stand for feed) if too forward, eat it with sheep or calves, in the beginning of May.

As the farmer's success partly depends on keeping his crop clear of weeds; this, as in others, must engage his attention.

As to reaping or harvesting rye; it is done in the same way as wheat.

Grass-

OF HUSBANDRY. 197

Grass-seeds may be sown among rye, before it is rolled in spring, and will answer as well, as if sown amongst wheat: a crop of rye is of about the same value as a crop of oats; but it is a greater impoverisher of land.

The land most proper for rye, is, that of a dry, open, loose, weak, sandy, or moory nature; and though strong land, of a good sort, will produce rye, yet other crops may be adapted for such land, which are more profitable.

C H A P. XXXIV.

Remarks and Illustrations on RYE.

RYE, formerly, was greatly esteemed in the light sandy counties of England; as the farmers thought such land would bring nothing else; but since the new husbandry of turnips and clover has

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made its way into the world, it is found that they change the nature of the land, and consolidate it in such a manner, as to prepare it for a crop of wheat, which is much more valuable than rye; however, rye is still useful in its place; and particularly for spring feeding; as it creates much milk; which makes it particularly useful to feed early lambs on; and what still adds to its value in this case, is, that the land most proper for rye is that of a dry, light, sandy nature, which, if the weather be ever so wet, the rain no sooner falls upon, but it sinks through, and leaves the surface dry; therefore the lambs can feed, and lie dry and warm; whereas, if the ground was clay, such as would hold water on its surface, the consequence would be bad; for it would destroy the lambs, or at least be prejudicial to their feeding and growth. Also, in such land, they would tread and dirty the crop; so that their feet would destroy as much as their mouths.

Again, rye is the best of all other corn to sow on reclaimed bottom, bog, or mountain.

tain. I say, the best of corn; but I apprehend no corn is equal to turnips, rape, or cole-feed, for such reclaimed lands; but, when rye is propagated on such land, it must be sown very thin; as it will stool much. The consequence of sowing thick, on such land, would be dangerous; as it would produce much straw, and little corn.

The great use for rye, is, to mix it with wheat, for bread: about two thirds wheat, and one of rye, make well-tasted bread, but black.

In this mixed state, it is called meslin. Some sow wheat and rye mixed, which is called meslin: but I do not like this method; neither do I see any meaning in it: for, in the first place, they do not ripen kindly together; besides, if the land will bring one ear of wheat, by the same rule it may bring two or more; and certainly wheat is a much more desirable crop, if it can be got on the same land.

Notwithstanding, rye is still useful (as before observed) in sand countries, and for reclaiming bog with, where the farmer is obstinately bent against turnips and clover.

Rye makes good malt for the distillers; being of a particular sweet taste or nature, it therefore, produces a great deal of spirit.

Again, a farmer may make use of rye with success, to bring his sows in season for the boar; it having a surprising effect that way; so that, they tell you, one peck of rye will make a sow take the boar, be she ever so poor, or soon after pigging; others say, that it will have the same effect on cows and ewes.

For the truth of this last assertion, I cannot vouch; but I have tried it on the few more than once.

Note, there are only two sorts of rye, worth the farmer's notice, namely, small
and

OF HUSBANDRY. 201

and big, and by others called winter and summer-rye.

The winter-rye is a large full grain ; but the summer-rye is a small grain, and is generally sown in spring, and will be in as early at harvest, as that sown at Michaelmas.

The winter-rye, sown to stand the winter, is a hardy kind, and will answer either to stand for seed, or to be sown, and eaten, for winter-feeding.

Rye-straw is a very good thatch, or litter ; but bad fodder for cattle.

C H A P. XXXV.

Directions for plowing, sowing, and harvesting O A T S.

O A T S are a grain that will grow almost on any sort of land, or with any kind of husbandry ; but though sometimes

sometimes tolerable crops are got by slovens, yet those who manage better may be sure of a larger return; and this is, or may be got, chiefly by tillage, and letting proper crops come in their right course of succession; by which means the one crop is an useful preparative to another.

If stubble of any sort be intended for oats, it is the better for being plowed as soon as the grass is eaten off; which is generally about November; and then, it being turned under, and the roots of the grass or weeds exposed to the frost, and the inclemency of the weather, they are killed, and, instead of a nuisance, become a friendly manure.

Many farmers make a practice of sowing oats upon lay; that is, in or about February, they plow up the lay, sow the oats, and then harrow them in very well, so as to be all covered.

This may answer where the land is good, and of a tender sod, not given to coarse grass,

grafs, or rushes ; but, however, in general, I do not approve of it, as I look upon fallowing out of the sod to be the most capital management in nature, for the reasons I have mentioned in the proper place.

The land must be plowed and the feed sown, in February, or, from thence till the latter end of March.

I look upon three bushels of oats to be a sufficient quantity for any kind of land ; for though it is a grain that does not stool, or branch so much as barley or wheat, yet it corns in proportion to the nourishment it finds in the ground.

When the oats are about three weeks or a month in the ground, sow any grafs-seeds you intend, and roll them in, as it will cover the feed, level the ground, and help the oats at the same time.

The oats must be weeded about the middle of June ; then any farther business

ness is over until harvest; for which, observe the directions under the head of mowing corn; they must be mown and harvested the same way.

Without doubt, by mowing, there is more fodder, and consequently more manure; besides all the hands it saves; which is a valuable consideration, at this busy season of the year; moreover, it should be the farmer's chief study, to work his lands with as little expence and labour as possible; and yet not to be so penurious, as to stint his land of its proper due.

There is a medium to be used in all things; and also much to be said in favour of genius and contrivance, particularly in farming-matters; as it is, of all occupations, of the most general benefit to mankind.

C H A P. XXXVI.

The Explanation of six different Sorts of
O A T S.

O A T S, like most other grains, have got a multiplicity of names, to express one and the same thing; but this (as observed in barley) is owing to a different dialect or confusion of tongues, peculiar to each country or kingdom. In fact, I imagine there is none more proper for these climates, than these six sorts, viz.

First, the single English white oat.

Second, the Poland-oat.

Third, the Scotch black oat.

Fourth, the naked oat.

Fifth, the red oat.

Sixth, the brown oat, sown much in the south west part of England.

If there be any others, that vary from these, it is not because they are different sorts or species, but because they have been altered, in either colour or size, by
the

the nature of the ground or climate they were sown in.

However, there is a particular choice to be made in all sorts of oats, which it is very material for the farmer to know, in order to heighten his success in this crop.

It is to be observed, that, in most oats, there are some which grow in couples, (that is) a large and a small one together, but in some a great deal more than others.

The farmers, who know the bad consequence of these double oats, are very careful in chusing their seed, to be all (if possible) of the single oat : and, indeed, they have just grounds for this nicety ; as a barrel of single oats will weigh more, by about two stone, than a barrel of the double sort ; and every one will allow, that it is the weight that distinguishes the goodness or badness of any corn.

The

The oat grows double from three causes.

First, by being sown too often on one sort of land without changing.

Secondly, by being sown too thick on the ground.

Thirdly, by the ground being too rank;

When oats have once got into the double strain, they ought to be sown no more, as it is hard to bring them back to the single oat again; though this may be done by sowing very thin on good strong land, and tilling well to prevent weeds from smothering the oats, and drawing them up weak.

I look upon the English single white oat, to be the best of all others, for the climate and lands of England or Ireland, as it is a good yielder, both in corn and meal, and ripens even; which is a very material point in this crop, it being so subject to shed, or shake its seed.

The

The next in value, particularly for the wet or cold lands of Ireland, or the north of England, is the black Scotch oat; this yields well, both in corn and meal, and is early ripe; therefore may be sown later, (if a cold wet spring), by three weeks, than any other sort; the meal also has a peculiar rich, sweet taste.

The Poland-oat is a fine, short, plump grain; the straw short and fine; but it will not turn out near so much corn on an acre as the two former.

Again, it is very subject to shed, with the least wind, the top and best of the corn, whilst that on the bottom branches is green; particularly if the land be cold and wet; but indeed, on warm, gravelly, or sandy land, it ripens more even; therefore a farmer has a better chance to catch his crops before it sheds; but this oat must be cut, while the chaff or husk on the lower branches is greenish; for if they be let stand, till they turn as white as the
top-

top-branches, half of the crop will be lost in harvesting.

The naked oat is a small grain; it is called naked, because it has no bran upon it, like other grain, but grows in the same state as the kernel of the common oat when shelled; therefore it is a ready grain for bread; as, when it is threshed, there is no more to do, to bring it to meal, than to grind it; and then it is all meal, and no bran; it is a sweet meal, and consequently makes good bread.

When it is sown on land proper for it, it will produce as good or profitable a crop as other oats; for though the bulk will be wanting, the meal is there; and if it be a good crop, the grain may be as large as the kernel of common oats, when shelled.

The straw is short and fine; therefore good fodder for cattle. This oat does not stool or branch much; therefore it must be sown

pretty thick on the ground ; two bushels will do this ; as the grain is small.

They must not be sown under furrow, but harrowed in ; as their small weak nature would not be able to work through a thick furrow.

The land for this crop must be finely tilled ; and as all land, after plowing, has an uneven surface, it is necessary, before this grain is sown, to harrow it once in a place, to level it, to prevent the seeds falling too deep, and also to make it spread even, and go farther ; after the grain is sown, harrow it fine.

Delay sowing grass-seeds, till the first of May ; that these oats may get a-head ; or they will be smothered ; being a small plant. The season for sowing the oats, is, about the first of April.

The red oat takes its name from the colour it bears ; though, in fact, it is not absolutely red ; therefore, I think the name is wrong applied ;

OF HUSBANDRY. 211

applied ; the colour is of a sandy cast, much like oats that have been heated in the stack.

It is a heavy thin-skinned oat ; therefore yields well in meal, and will nearly produce as much on an acre, as the English white oat ; however, it requires a rich, warm, well-tilled soil.

I have heard gentlemen say, they have had greater produce from this than any other crop : but, as that was not my case, I cannot speak from experience in this particular.

The Expence and Profit arising from an
Acre of OATS, English Measure, at five
Yards and a half to the Perch.

	l.	s.	d.
To seven quarters of oats, at 18s.			
per - - -	6	6	0

P 2

To

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	l.	s.	d.
To plowing twice, with one man and two horses, - - -	0	5	0
To harrowing, fowing, rolling, and water-furrowing - - -	0	2	0
To chance of weeding - - -	0	2	0
To feed - - - -	0	9	0
To mowing - - - -	0	1	0
To gathering and binding -	0	1	0
To swarth-raking - - -	0	0	4
To stooking, carriage home, and attendance - - - -	0	2	0
To carriage to the market, and expences - - - -	0	6	0
To land-rent - - - -	0	15	0
	<hr/>		
Total expence	2	3	4
	<hr/>		
Clear profit	4	2	8

C H A P.

C H A P. XXXVII.

On the WHITE VETCH.

THE white vetch, in some degree, partakes of the nature of a white or boiling pea, as it will boil soft and smooth like that grain; and is chiefly used for making puddings of; it is mild, good and palatable, consequently very proper for that purpose.

It only differs from the common vetch in colour, which is milk white, but the shape of the grain and the straw is like it; however it will not stand the winter so well, being of a tender nature.

The proper time to sow it, is in April. It thrives best in light sandy land, and likes to be set in drills, and hoed; if it be managed thus, it will produce a great return.

C H A P.

C H A P. XXXVIII.

On the SIBERIAN, or naked WHEAT.

THE naked wheat is a native of Siberia, a very barren and cold climate. The land is covered with snow nine months in the year; consequently there are only three months to till, sow, and reap in.

Their chief support of corn, is this naked wheat. This grain partakes of two species of corn, viz. wheat and barley; one side of the grain resembles the former, and the other the latter.

It is a very quick grower, and lies but a short time in the ground before it vegetates.

It is a full plump corn; about five hundred grains weigh an ounce; therefore it is about one sixth bolder than English wheat.

It

It comes up with a very broad, strong, healthy blade, owing to the longness of the grain, and the quantity of nitrous particles it contains. The straw is as strong or as gross as that of wheat, and the grain grows in a chaff like it.

As it partakes of the likeness, so does it of the quality, of both wheat and barley, for it makes good bread, and good drink.

In order to prove its value more particularly, a bushel was ground and made into bread; twelve pounds of wheat seconds were made into a loaf; and a like quantity of this Siberian wheat was also made into a loaf, and both put into one oven. When they were baked, the English wheat loaf weighed fifteen pounds, and that of the Siberian eighteen; and the bread of the latter was as good as that of our English wheat; neither does it produce half the quantity of bran as common wheat.

There are two sorts of this Siberian wheat; one has a flat ear with only two rows, like that of flat, or what is called battledore-barley; the other has six rows in one ear, and the grain in them much smaller than that in the ear with two rows. Both sorts are bearded like barley.

One bushel was melted and made into small beer, and ale, both of which were very good and pleasant to drink; and it was found to produce a greater yeld than our common barley; perhaps owing to its thin skin, and fullness of flower.

In 1767, a nobleman brought from Siberia one pint, and gave it to the Society of Arts and Sciences.

Those gentlemen judged from the look of the grain, and from the nature of the country and climate it came from, that it would be of great utility to England, could a quantity be raised sufficient to feed the kingdom.

Upon

Upon which they divided their small portion among such persons as they thought would be industrious and careful enough to make the most of the produce.

A common wine glass full was given to Mr. Halliday, of Liverpool, half of which he gave to another gentleman.

Mr. Halliday, like a faithful servant, did not hide his talent in a napkin, but by proper judgment and industry, he sowed and made it produce thousands, and ten thousands, as from this small quantity has sprung, in the four last years, many hundred bushels.

The Rev. Mr. Meredith was not idle in this public spirited undertaking. He procured a quantity from Mr. Halliday, and divided it among such of his acquaintance, as he hoped would propagate it to the best advantage.

He

He was so kind as to send me one bushel, which he got from Mr. Halleday; for which I return both those gentlemen my sincere thanks, and shall ever think myself under a great obligation for the favour.

But the last season I had not an opportunity to do it justice, which was owing to a disappointment occasioned by the neglect of carriers; for though it left Liverpool the last day of April, yet it did not arrive in York till the 7th of June, which gave me great uneasiness, as I looked upon the season as over, the seed lost, and my great expectations at an end for that time.

However, as soon as it arrived, on the 7th of June, I trench-plowed a piece of bad land, covered with heath and other rubbish, and which had been lately inclosed from a common.

On this I sowed it, and notwithstanding all disadvantages, it was a tolerable good crop, and much better, I am satisfied, than
any

any sort of English grain would have been, had it been sowed on the same land, and at the same time of the year.

I had received a few grains from another hand. This I set in a proper season, and upon good land, each grain at a foot asunder, which gave a produce of about two thousand fold.

In short it is the greatest multiplier I ever saw; for though it will grow better than other grain upon bad land, yet if the ground be good, it will stool out, and flourish in proportion, but the greatest care must be taken not to over seed the ground.

The proper season for sowing it, is about the beginning of April. Trench-plow the land to smother the weeds, and to raise a good deep mold.

Then harrow it well, but with care, not to drag up the sods or weeds with the harrow pins.

Being

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Being thus prepared, set your Siberian wheat with a dibble or setting-stick, and make the holes at one foot distance from each other; into each hole put three grains, and let the land be of what degree of richness it may, doubt not but nature will force out stooling branches sufficient to fill the surface of the earth, and give a greater produce than if you crowd the ground too much with seed.

By the above method, it will not cost for setting above two or three shillings an acre at most; but if the ground were holed with my transplanting machine, the labour and expence would be still less; and the seed is a mere trifle, for about twelve pounds of naked wheat will seed an acre, and thirteen pounds and a half of English wheat will set an acre likewise, and so in proportion for every sort of grain, according to the largeness of the seed.

After the seed is set, cover it by filling the holes with a rake. One man will cover at least two acres in a day, by this method; and

and if you please, you may sow grafs-seeds before the ground is raked, and be assured they will grow, and thrive better amongst corn thus regularly set, than if sown promiscuously in the common method.

C H A P. XXXIX.

A DIALOGUE between a FARMER and
the AUTHOR.

FARMER.

WHAT is the first principle of agriculture?

AUTHOR.

The first principle in agriculture, is to make heavy land light, and light land heavy.

FARMER.

How may this be effected?

AUTHOR.

AUTHOR.

It may be done two ways; neither of which can fail of success. First, by laying sand upon heavy clay land, and clay upon light sandy ground; which tempers the two extremes, and brings them to a friendly loam. Secondly, by trench-plowing as directed in this work.

FARMER.

Why trench-plowing; will not our common method do better; particularly on our thin down-lands, where, if we plow above two or three inches deep, we spoil the ground?

AUTHOR.

This is a bugbear that many farmers are frightened at without any real cause, as any land will bear trench-plowing. For, though the under stratum of some land, at first turning up, may be stubborn and unkind, yet, being exposed to the atmosphere, together with a top-dressing of a compost, or
some

OF HUSBANDRY. 223

some other fine, rotten manure will bring it to a mellow temperate corn mold.

FARMER.

In what sort of soil will trench-plowing answer best?

AUTHOR.

In all sorts without exception.

FARMER.

In what sort will thin plowing answer best?

AUTHOR.

In none, for the opposite reason.

FARMER.

Pray favour me with your reasons, upon which you ground this bold assertion? And take care they be substantial, or I shall bring a jury of farmers upon you.

AUTHOR.

It is not the first time I have been criticised upon by them; and yet I have convinced a great many of them, either by ocular demonstration,

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monstration, or argument, of their error : and some, to my certain knowledge, has ventured out of their old road, and are now reaping the profit of it.

FARMER.

Your reason upon shallow plowing, if you please ?

AUTHOR.

On high, thin, gravelly, or sandy land, which lies near chalk or lime-stone, and the surface, or corn mold, mixed with any sort of small-stone or pebbles. If such be tilled shallow, it is not consistent with reason that it can produce a good crop : for it is well known, that corn roots strike no deeper than the plow has gone.

Suppose a plow only turns up two or three inches of earth, so thin a body of mold is, by the sun, soon heated through to the roots of the corn ; and, being mixed among flints, or stone, adds to the evil, as they reflect a double portion of heat, which burns or extracts the juices from the tender fibres

fibrous root ; consequently must render the crop weak and sickly : in a dry summer the crop is scarce worth reaping, and in a wet one, which suits such land best, it does not produce above half the crop it would, if properly tilled ; for, by nature, such land is good and full of salts, and could not miss of a crop, were it tilled or brought to a proper depth of corn mold.

FARMER.

In what case does trench-plowing prevent the sun from burning the roots, &c. complained of in the opposite case ?

AUTHOR.

Indeed, Mr. Farmer, you seem to trifle with your own understanding, or you would not make me waste time in answering so simple a question : besides, I have already treated pretty largely upon this subject, in my first volume ; however, a few words will do, you shall be indulged.

By trench-plowing, the upper sod, or corn-mold, falls to the bottom of the furrow,

perhaps eight or ten inches deep. That sod, which is interwoven with, and full of roots of grafs, weeds, stubble, &c. contains a great deal of nitrous and juicy particles; and these roots, being covered with a sufficient quantity of maiden earth, cannot vegetate, but are smothered and killed. The death of them brings on a fermentation; then follows a putrefaction, which turns them into manure; and consequently makes them food proper for other plants.

And as these juicy particles lie too deep for the sun to extract them from the earth, their enriching substance is a kindly food for the corn-roots to feed upon all summer; neither can the earth, so long as they remain in it, run together in a close solid body; nor can it be called barren or thirsty; but the root will always find admittance and nourishment in it, and will not fail to enlarge the ear upwards, in proportion to the depth it goes; for no fibre will go farther than the earth contains food suitable to its nature. In short, if the ground be hot
and

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and sandy, trench-plowing makes it cold
and moist; and, if strong and clayey, it
opens it, and keeps it loose and mellow.

CHAP. XL.

A few Remarks made in the WEST of
ENGLAND.

BEING glad both to give and receive
any instructions, that may be of utility to the
public, for the improvement of agriculture,
when upon my travels, I generally wait upon
such gentlemen-farmers as I am told are best
able to satisfy my curiosity; and also most
likely to take advice.

And as I am well convinced of the great
advantage that would accrue, not only to
the husbandman, but also to the public in
general, could the farmers be prevailed
upon to put in practice trench-plowing, and
setting the seed regularly.

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I generally introduce those subjects, and am as often answered, that setting the seed grain by grain, would be too tedious and expensive; and as to trench-plowing, their land will not bear it.

However, I seldom quit the field till, by trying the ground, I have convinced them of their mistake in the matter of trench-plowing.

I have sometimes started this subject among a company of farmers; and have had the satisfaction to find some of them quote circumstances to back my arguments; two or three of which I shall mention as follows:

Mr. William Lacy, of Ropley, in Hampshire, said that he had a piece of thin chalky land, which, a few years ago, he plowed in a very dry time; his orders, to the plowmen, were to plow it as usual, perhaps not above two or three inches deep, for fear of coming too near the chalk, which would spoil the land.

However,

However, as the ground was extremely hard and dry, the men could not obey their master's orders; for, instead of three inches, the earth broke up from the bed of chalk, and turned up in large furrows, perhaps a foot thick.

The farmer, as well as his neighbours, thought the land was spoiled for ever; but, contrary to his expectations, he never had so good crops on that ground before, as he had both that year and since.

The like case happened to one Farmer Baker, not far from Warminster, Wilts. For though the land broke up from the chalk, yet it brought better crops after this deep plowing than before.

A gentleman-farmer, near Froome, in Somersetshire, plowed a piece of strong clay-land, in a dry time. His intention was to plow it thin; for as it had a white clay under the corn-mold, he was afraid to turn it up, lest it should spoil the ground. But,

contrary to his desire, the ground rose in large thick furrows, and brought up much clay with it. However, the clay melted with the sun in summer, and the frost in winter; and both the ground, with the crops upon it, have been much better since than before.

Mr. Davis of Frampton, in Dorsetshire, a very worthy gentleman-farmer, plowed a piece of down-land, much deeper than common, and his crops were a great deal better for it. I have forgot the particulars of this experiment, but well remember the substance, as it caused a laugh in the company at dinner.

I as usual, was extolling trench-plowing, but Mr. Davis was not without a great many doubts and fears, that his land would not bear it. However, in the midst of his scruples, he recollected the above case, which had happened to himself.

Mr. Ingram of Clarendon-park, near Salisbury, Wilts. rents a down farm. He has a large

a large field near his house, which he fallowed last summer. The ground was very full of weeds and scutch-grass, and he had taken a great deal of pains to destroy them, by plowing, and harrowing it many times over. At the time I was there, he was burning the weeds, and such rubbish as was harrowed up.

I told him he might have improved the land much better, and with a great deal less expence, if he had trench-plowed it, for by that means all the substance of the weeds would have remained in the ground, and turned into a rich manure; whereas by burning them, such enriching qualities are evaporated.

In short, I explained to him the whole method and value of trench-plowing, which he seemed to listen to with attention, but was not without his doubts and fears, that the ground would not bear it; however, those doubts were soon removed, by trying the ground with a spade. But what strengthened my argument the more, was a garden

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which

which had been inclosed from the said field. He told me that for some years after the garden was inclosed, it produced very bad crops. Every thing that grew in it was small and runtish; neither could the ground be kept free from weeds. A gardener told him, as a great secret, that if he would have good crops, he must trench to the depth of three spade-grafts, and throw to the bottom all the upper mold which contained the weeds. He did so, and ever since it has been the best garden in the country.

When he considered well the whole affair, he liked the scheme; and immediately got a plow made according to my directions; and as wheat-seed time was then coming on, he trench plowed the land on which he sowed his wheat. He allowed to each acre only about half the quantity of seed that is commonly used. And, at this time, there is not a crop in the neighbouring country that looks so well as his.

The

OF HUSBANDRY. 233

The last time I saw him in Salisbury, he told me that many farmers, hearing of his proceedings, came to see his trenched-land and crop; and every one approved of it; and that he knew a great many who were then getting trench-plows made from his pattern; and that he was sure it would gain ground amazingly.

Mr. Hardy, of Martins-town, Dorset. is a very considerable gentleman-farmer, and seems to be indued with talents and a spirit for improvement. I shewed him how to alter his plow, for the purpose of trench-plowing. He told me that he would certainly begin this piece of husbandry.

Mr. Thomas Nicholls, of Burton, Dorset. is a considerable gentleman-farmer; and one that seems to excell in husbandry. He is so much bent upon this method of trench-plowing, that he offered my plowman thirty pounds a year; which, by the by, I do not thank him for; as it has made the man saucy ever since.

William

William Helyar, Esq; of Coker, in Somersetshire, a gentleman fond of improvements, is also determined to begin the method of trench-plowing.

Upon looking over my memorandum book, I find no less than two hundred and twenty-nine, to whom I have shewed in the West of England, how to alter the plows for trench-plowing; and who told me that they would absolutely put in practice, what I have taken so much pains to make them understand, for their own interest.

And now, I beg leave to clear up a doubt which may arise in my reader. For, (says he) self-interest is the first law of nature; therefore, if Mr. Varley has no private view, why should he take all this trouble to instruct the farmers? But, I can assure him, mine are public-spirited, and not selfish views. For though I have spent considerable sums in travelling, and taken a great deal of trouble upon the occasion, I defy any one to say, that I ever reaped a shilling advantage,

OF HUSBANDRY. 205

vantage, for any thing I ever shewed him; and, to avoid any appearance of private interest, I would rather go to an inn, and pay for what I had, than live at free cost at the houses of gentlemen; whom, to give them their due, I have found, in general, very hospitable.

Should it be objected to me, that I have some interest in publishing this work. I answer, that I have, indeed, a small profit therein; but that I could have reaped three times as much, had I stayed at home, and wrote it by my own fire-side. But though this would have turned more to my advantage, yet it would not have been so much for the public good. For I am convinced, that many farmers to whom I have explained these interesting methods of husbandry, will practice from what I shewed; who, probably, would have overlooked them, had they only read the books. Precedent joined with precept, is very prevailing; and both tend towards practice.

C H A P.

C H A P. XLI.

On thin SOWING, &c.

AS in my last chapter I gave some favourable hints upon deep plowing, gathered from several counties; this chapter, in like manner, will prove the value of thin sowing, which particularly deserves the farmer's attention.

A tradesman in Gloucester, has one acre of land, which lies within the turnpike. The same has been some time occupied as a garden; but it being overrun with weeds, he was advised to sow it with wheat, and lay it down with grass-seeds, which accordingly he did; but contrary to the common method: for he bought a peck of wheat, and after the land was properly tilled, hired two women to set it grain by grain, with setting sticks.

They

They used only seven pints of the seed, and finished the acre in thirteen hours.

They had orders to make each hole nine inches asunder, and in each to drop one grain of corn. However, as they had no regular rule to go by, they might err in the distance, and also sometimes put more grains than one in a hole.

The seed was set in February, and the land hoed in April, to keep down the weeds, which sprung up very plentifully. Clover seed was sown immediately after.

In July, I viewed the crop, which was remarkably good; but had it been kept clear from weeds, the clover would have been much better, as I perceived it was much crowded.

The straw was at least six feet long; the ears, in general, about six inches long, and contained, upon an average, about eighty grains each.

I spent

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I spent several hours in counting how many ears sprung from a root, which varied, all the way, from fifteen to thirty. So that, upon a medium, I judged that each root through the acre, taking one with another, produced twenty ears.

It was believed, by all judges in corn, that the acre would produce, at least, fifty Winchester bushels.

The Rev. Mr. Sandys, Rector of Yeovilton, Somersetshire, set a piece of ground (in quantity about an acre and a half) with wheat, grain by grain, in the same manner as they dibble beans. It took a peck and a half of seed; the labour cost half a guinea. The produce was eighty bushels of clean corn, Winchester measure.

A gentleman, in Warwickshire, set four acres also, grain by grain. The seed it took was three pecks and a half. The labour cost seventeen shillings and six-pence. The
produce

OF HUSBANDRY. 239

produce was two hundred and two bushels of clean corn, Winchester measure.

A gentleman, near Newcastle-upon-Tyne, set some naked or Siberian wheat, one foot asunder each grain; it produced about two thousand fold.

In short, were I to insert all the experiments of the sort, which have come to my knowledge, they would fill a volume: neither is there any necessity for it; as every sensible man will admit, that, if an experiment will stand good for one acre, it will for any greater quantity.

It is only enlarging the scale, and keeping up to the rules; and fear not but that the produce will be the same in proportion.

Would all the farmers in the kingdom, come into this saving method, of setting the seed, it would be one step towards reducing
the

the price of provisions; as it would save annually, at least, a million quarters of corn; which, by the present method, is thrown away, and lost to all intents and purposes.

The money that would be paid for labour, to make this saving, would go in a direct channel to such of the women and children as would otherwise be idle.

C H A P. XLII.

A monthly KALENDAR, or Memorandum of Works to be done, as they come in Season, round the Year.

J A N U A R Y.

IN the beginning of this month, plow the fallows that missed plowing in autumn.

Plow for beans and pease; take the ridges up, to lie dry; towards the latter end of the month, sow them, if the weather permits.

Until this time, eat the clover with sheep, or light cattle, so as not to tread it; but know, it must be laid up, to get a head against spring, for early lambs, &c. or meadow.

Flood your marshy low land, or any other whereon you can turn water. In order to this, take in the water out of any river or
VOL. III. R drain,

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drain, at the highest part of the field; convey it first along the head of the said field, by a small surface-grip, or drain, about a foot wide, and the same deep; at about every ten yards distance, cut, with a plow, a furrow sloping-wise of the hill; so that when the furrows are full, the water will flow over at the lowest side; this is easily done; as there are few fields but what one side is higher than another.

If the weather be frosty, carry out dung; leave it in heaps, ready for spreading, when the frost is gone.

Lop, top, and plant forest-trees of all sorts, plant quicksets, and make and repair your ditches, clear your water-courses.

Kill and save bacon, hang-beef, and hams.

This time, and from Michaelmas, is a good time to repair quickset hedges, by laying the thorns down in gaps, or open places, where the fence is thin at the bottom; nick
the

the thorns two thirds of the way through, in order to make them bend and lie easy; by which means they will be surer to grow, than if they were bent without nicking; which would bruise and wound the wood, and prevent the sap from rising past the bruised place; whereas, if it was cut as thin as half a crown, provided the uncut wood bent easy, without bruising, the sap would circulate through the narrow uncut place to the branch, which would flourish, and spread along the bottom of the hedge, and make a good fence.

This, in England, is called *splashing*. The labourers in Yorkshire and Lincolnshire are very expert at it; if the hedge be ever so ragged and thin, provided the tops will meet, they will make a good fence, which, the year after, will almost turn a hare, when the young fibres shoot out.

But this piece of dexterity is not universal in England; and in Ireland I never saw any of it; though few people in the world go to

greater expence in planting quicks, and making ditches, &c. than the Irish.

Continue to break and swingle hemp and flax.

This is the best time to thresh out barley, as it is wanted for malting; and the straw, which is not quite so good as oat-straw, will eat best in hard weather.

Early lambs are now dropping; turn the ewes to turnips, if you have any; which will fatten the lambs quickly; but if the weather be wet, and the ground soft, it will be too cold for the lambs; in this case, pull the turnips, and take them to the ewes on grass-land; but have no regard, in this case, for weathers, as they will feed better on the ground where the turnips are fast to the root, which keeps them fresh and juicy, and from rolling about in the dirt as they scoop them.

Remember

Remember to throw roch-lime into the hole of the little-house, to prevent it from smelling, and to dry the dung so, as to make it spread, when laid on the land.

Remember to send men to pick up the shells or bottoms of the turnips; that they be clean eaten up, before you make a fresh break.

Remember your bees, and if weak, feed them with cakes made of malt-flour, mixed up with sweet wort, or a cake made of rye-meal, mixed with treacle water; or give them brown sugar. Also turn up the hive, and sprinkle it well with sweet wort, or treacle-water.

Plow your barley-fallow for the second time; as I suppose it was plowed in autumn to turn the stubble under.

•Towards the latter end of the month, if the weather be open, sow vetches, whether for feed, fodder, or feeding on the ground; but, if for feeding on the ground, they would

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have been better sown in the latter end of the summer ; as directed under that head.

House your weanling calves and foals, if not done sooner.

Dress your meadows.

Cut and spread ant-hills; by which means the ants, being exposed at this severe season, will be destroyed.

Look after your pigeons, feed them, and spread ashes on the pigeon-house-floor, to keep the dung from caking.

F E B R U A R Y.

SOW beans and pease, which ought to be done, if the weather permit, before oat-feed time.

Towards the latter end of the month, if the weather be open, sow oats.

The

OF HUSBANDRY. 247

The rye, that missed sowing in autumn, must be sown at the beginning of the month.

Plow your barley-fallow, if not done last month. Transplant rape-stalks.

Continue to splash quickset-hedges.

Lay up your meadows, clean them from all sticks, stones, and rubbish, that may be obstructive to the scythe.

Spread, and break horse and cow-dung, ant-hills, and mole-hills; which is done in a cheap easy manner, with a molding-sledge.

Look over your wheat-land, lest any water stand, by the stoppage of sods or stones falling into the furrows and grips.

Set osiers, poplars, willows, and other aquatics; lop trees, plant quicks, open half the passage of your bees; grip and drain the wet lands; look that no water stand on your crop.

Your forward fat lambs will now begin to be ready for the market; do not keep them too long; for what they gain in size, they lose in price; as the markets drop when the season advances; besides, if they are off early, the ewes may be fed on clover, and be ready for market early also.

Set potatoes, to come in early.

Lay them first, and cover them well with long horse-dung, to preserve them from the frost.

Continue to break and swingle hemp and flax, and peel winter-hemp.

Begin to beat the seed out of the flax and hemp.

The dew-rate flax must now be spread on the grass; the snow, frost, and rain, rates it well.

Remember to feed your bees, turn the hive up, and sprinkle the combs with sweet wort.

Continue

Continue to spread foot on your wheat, to kill the red worms, at the rate of five barrels to the Irish acre.

This is a good time to lay any sort of short dung on your wheat-land, such as ashes, pigeon, rabbit, and hen-dung; but do not lay lime on, without mixing as directed; lest it burn the blades of the wheat.

You must not defer brewing your keeping strong beer any longer.

In the first week, or first fine open weather in this month, finish plowing, for the last time, your winter-fallow, or ground intended to receive the wheat-plants which were sown in autumn, and get them transplanted as quick as possible in the fresh mold; that they may keep aforehand with the weeds, in order to suppress them.

About the latter end of this month, is the time to sow your spring-wheat land; that, through over-much wet, or hurry of business, missed sowing in autumn; it will answer

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sower very well for summer-wheat; and I have seen as good a crop from spring-sowing, as that which stood all winter; however, none but the right early kind will ripen in time.

M A R C H.

THIS is a very busy month with the farmers; and it behoves every one to bestir himself, to get the proper crops into the ground in due season.

Plow for, and sow oats, if clover be to be sown among them.

When the oats are harrowed well, sow the clover-feed, and bush-harrow it; but I take it to be the best way to defer sowing it till the oats are come up; then sow the feed, and roll it in.

If the season be good (but not else) sow barley.

Sow

OF HUSBANDRY. 251

Sow mustard-feed ; the ground, if stubble, must have two plowings ; but it will grow, with great success, on lay land, if good, with once plowing ; harrow it well before sowing, and after sowing roll it.

Lay up, dress, and roll your meadows.

Spread ant hills.

Lop and top trees.

Plant quicksets. Plant osiers, willows, and other aquatics.

The fat sheep must now be kept drawing off the turnips ; as they now begin to grow near an end, and the markets advance much about this time :

You may yet sow vetches ; though it were better done sooner.

Finish splashing quickset-hedges.

Turn

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Turn your ewes and early lambs into clover or rye-grass ; as the turnips are near an end.

Widen the passage for your bees, and continue to feed them, if required.

Turn up the hives gently, and sprinkle the combs with sweet wort.

Geld your year-old foals, take care to rub the thighs, and over their kidneys, with marsh-mallows.

Set the tails of your young horses. It is also a good time to break them.

The calves that drop now, ought to be kept for rearing ; but as milk is at this time scarce, a good drink may be made, by boiling hay till the water is very strong, into which put, for every three calves, and so in proportion, a pint of flax-feed, a pint of oat-meal, and a quart of skim-milk ; put the flax-feed in along with the hay, and
boil

boil it all the time ; it will be smooth, and like a jelly ; put in the oatmeal and milk when the hay is taken out ; after which give it a good boiling.

There is no finer feeding for calves than this ; it both strengthens, and makes them grow large ; and it is a very cheap food to rear them with.

There are people in England, who make a very comfortable living, by buying calves as soon as they drop, and rearing them thus : some give them nothing but flax-feed and hay-water, after they are a month old.

They can buy the flax-feed from the oil-mills, at about three shillings and six pence a bushel ; and a bushel will rear two calves, by the above rule.

I have heard of farmers in Lincolnshire, rearing from sixty to an hundred calves in the year, by this method.

But

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Put out dung for potatoes, and set them, whether by plow or spade.

Sow flax-feed, when the land is well harrowed.

Sow all sorts of artificial grasses, such as burnet, clover, rye-grass, white hay-feed, common hay-feed, timothy-grass, &c.

Sow beans and pease. Sow white pease.

At the latter end of the month, if the weather be good, roll wheat, bere, and rye; but sow the grass-seeds first, if they be intended.

Sow broom and whin-seeds on the tops of ditches, for shelter; but if it be a gravelly ground, they will not grow well; therefore make the drill deeper, in which throw a little good earth, to sow the seeds in; this is easily done, and the crops are surer of success.

Clip young quicksets, to make them spread.

Water

OF HUSBANDRY. 255

Water or rate the bunch-rate flax, if the water be clear of ice.

Turn your young cattle on to the bog or coarse mountain, which will eat better from this till the latter end of May, than any other time of the year; and is of great use, to save the fine pastures, till they get a head, by which the grafs retains the dew, and the sun is kept from the roots.

Plant potatoes, sow flax-seed amongst them, at the rate of eight quarts to an acre, to raise for feed.

Finish killing your bacon-hogs, this month, or making hung-beef or hams; as it will not do so well if done later.

Towards the latter end of the month, if the weather be good, sow barley, and grafs-seeds, after it is harrowed, bush-harrow, or roll them in.

Spread foot on your green wheat. See receipt for red worms.

Sow

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Sow burnet or vetches, to stand for feed.

Spread ashes, compost, pigeons, or other short manures, on your winter-crops.

Continue to plow your fallows.

Sow hemp and flax. Try your flax-seed first, if it will grow.

The quickest way to do this, is, to lap a little seed in a woollen rag, and put it into a couch of malt; this will shew weather it has lost its growing quality, or not, in two or three days.

A P R I L.

THIS is also a busy month with the farmers.

Sow buck-wheat, flax, hemp, lucerne, faintsoin, rye-grass, clover, and hay-seeds of all sorts.

Sow

OF HUSBANDRY. 257

Sow barley, which ought to be finished this month; though some will sow till the middle of May; but this is better avoided, if possible; though, indeed, it is better to wait a month, than sow in soft, dirty, wet weather; as it is a tender grain.

About the middle of this month, turn sheep into clover; as the turnips are now done.

Finish rolling, stoning, and cleaning the meadows.

Destroy young rooks, and their nests; which is easily done, by small long poles, one spliced to another, with an iron crook fixed to one end, which will easily pull the nests down.

Plant quicksets and forest-trees of all sorts.

This is a good time to give your mares to the stallion; make use of such a one as is broad and strong, short-jointed, moves

light, and goes true on his legs, what is called half-blood, or in England Chapman's horses : Ireland is ruined, by following too much after blood, which are not fit for service (on those hard roads) or the farmer's profit.

If time permit, in the latter end of the month, begin to pare your land for burn-beating.

This is a good time to begin to dig, drain, and reclaim your bog, as directed. (See reclaiming bog.)

Clip your young quickset-hedges, to make them grow thick at the bottom, by putting out fresh shoots or fibres.

Continue to keep your cattle on the bog and mountain ; as the heath, at this time, is wholesome, sweet, and tender ; and by doing this, you save your fine grass-pastures, till they get a head.

Delay

OF HUSBANDRY. 259

Delay no longer to water or rate your bunch-rate flax; for in hot weather the worms, both in water and on the grafs, will damage it, if done much later.

Sow mustard-feed on stubble-fallow, or lay-land.

In the beginning of the month, finish sowing oats, white-pease, and vetches, grey-pease, and mustard feed.

Roll your corn of all sorts; delay no longer to lay up and dress your meadows, and roll them before the ground is hard; set the tails of, and break, your young horses.

Keep your calves that drop now, for rearing; feed, and make choice of such as are described in the calendar for March.

M A Y.

WE may now suppose most of the busy seed time to be over ; but if any of the latest crops, such as buck-wheat, barley, and fundry sorts of grass-seeds, and potatoes, remain unfown, finish them as soon as possible.

Cross-harrow your fallows of all sorts, and plow them ; after which bleed your horses, and give them a fortnight's rest ; it being very necessary to refresh them, after their hard seed-time labour.

The first of this month, (old style) break your summer-pastures, bleed your horned cattle of all sorts, and give them a lick of tar, which will prevent diseases, or catching distempers.

This is the time to buy in your in-calvers for milk ; make choice of those with a fine, long, small, green horn ; fine and clear of leather

leather under the chops, and a good full shoulder, deep-chested, broad, and well made behind, a straight broad back, full hips, with short straight legs, a walk open and stately, a thick skin, and broad-ribbed, with a good milk-vein and udder, and large teats; such dams are worth breeding, or rearing calves from, and their calves will cost no more keeping than such as are quite the reverse.

Were a farmer to bear in mind, that a calf, when a year old, of the above beautiful shape, will bring from forty to fifty shillings; when one of the ill-favoured kind (as Joseph called them) will not give, perhaps, above ten or fifteen shillings; certainly, he would be more nice in his breed, particularly when he considers, that they both take the same keeping.

Were all farmers or breeders to be so circumspect, what a beautiful brute-creation we should have!

Give the breed-mares the horse; and, as they are generally low in flesh, from their

hard-labour, they will be more apt to hold in foal.

Put your dung out in dung-hills, in fallow-fields, where it is to be spread.

Continue to destroy moles, rooks, magpies, &c.

Look after your bees, which, if strong, will now begin to swarm; and one swarm now will be worth two later in the season.

Continue to pare your land for burn-beating; and, if the season be wet, the fods must be set upon an edge to dry.

Towards the latter end of the month, plow your fallows, that were cross-harrowed the beginning of the month.

Weed your wheat, and if too forward or rank, eat it with light cattle, such as calves, foals, or sheep.

Roll your wheat, and all sorts of grain, first sowing the grass-seeds intended.

Lay

OF HUSBANDRY. 263

Lay up your clover intended for hay, or feed; but if a crop of hay, and a crop of feed be required, it must not be eaten in spring; in which case, it will be ready to mow by the middle of this month, and then the feed crop will come in good time, before short days and bad weather put in.

Cut turf, and provide your winter-firing of coals, &c.

You may yet continue to plant fir-trees, without danger of success in growing.

Continue to geld your young colts; this being the safest month in the year; as the young grass purges them, and keeps them cool and open; therefore, in less danger of swelling.

Do not forget to go on with reclaiming bog; throw it up in ridges, and burn the fods as directed. (See bog.)

Weed your quickset-hedges.

J U N E.

THE clover must not be eaten any longer (that is intended for either seed, or hay) than the first of this month.

The forward clover's first crop will be now fit to mow; take it when it is very early in flower.

Continue to cut turf, and provide the winter-firing.

About the twenty-fourth of this month, the buck-wheat, pease, or vetches, will be ready to plow in for manure.

As near the twenty-fourth as possible, and when there is a prospect of rain, sow turnip-seed.

Weed hemp, flax, and corn, early in the month; but it ought to be finished last month.

Look

OF HUSBANDRY. 265

Look after your bees, which, in hot weather, will swarm, and do well, if early in this month; but the latter end is too late, if it could be helped.

Weed your quickset-hedges.

This is the time to burn your land intended for turnips, rape, or cole-feed.

Wash and clip sheep, pare their nails; to prevent them from being lame.

Bleed your cattle, particularly poor cattle, when turned to feed.

About the twenty-ninth of this month, sow rape and cole-feed.

The beginning of this month, rye-grass will be ready to mow.

The latter end of the month, natural meadows will be ready to cut.

The

266 A NEW SYSTEM

The rape and cole-feed will be ready to reap the beginning or middle of the month.

Look after your rank flax ; and if it lodge, turn it, as directed.

Burn lime for your fallows.

Hoe and weed potatoes, set with the plow or spades.

Plow, and sow your rape and cole-feed-stubbles with turnips.

Provide pits to rate flax in, and fill them with water, in order that it may be the softer ; which it will be, the longer it stands ; and the softer the water, the better. (See remarks on flax.)

JULY.

J U L Y.

THE north of England and Ireland are now busy with their hay-harvest; but the South of England has got it over.

Continue to sow rape and cole-seed; which may be done with success to the last of the month; and it is better to wait a week or a fortnight, for a prospect of rain, than to sow in dry weather; for if the ground be very dry, a great part of it will not come up till rain falls.

The latter end of the month, turn bulls to your store-heifers.

When the weeds or grass grow, your fallows must be plowed.

Towards the latter end of the month, early rye will be ripe; reap it.

Pull

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Pull

268 A NEW SYSTEM

Pull and rate female hemp; take care not to break the seed-hemp, when pulling the female.

Pull and rate your white flax, beginning under the hedge, or where it lodges. This is the best time to buy in store-heifers for the bull, which will be got nearly as cheap now, as two months sooner; by which you will save the grafs, to get a good head, which will bear more stock.

AUGUST.

THIS is the harvest-month for the North of England and Ireland; but in the South of England it is mostly over.

Reap and mow all sorts of corn as it becomes ripe; but some will not be ripe till the next month, particularly what grows on cold wet land.

When

OF HUSBANDRY. 269

When you stack the corn in the hag-yard, between every layer or course of sheaves, throw fine sand; which will go into the ears of the mice and rats, and prevent them from destroying it.

As soon as the corn is off, plow for, and sow turnips, burnet, or vetches, for winter-feeding; which will do the land good, and be a great help to fodder.

Remember to plow your fallows.

Pull, and stack feed-flax, as directed.
(See flax.)

Fallow your flax-stubble for wheat, which will be in fine tilth by Michaelmas, with two plowings; and there will be no doubt of a good crop.

Turn rams to your ewes for early lambs.

Geld your lambs. Turn to feed such ewes as you intend for store.

Wean

270 A NEW SYSTEM

Wean your lambs and runner calves.

Hoe or weed your turnips, or spread ashes on them, if you have them to spare.

Put your bulls to the store-heifers.

The beginning of this month, buy in your store-heifers for the bull; but take care they are not bulled before you buy them.

A sure token to know this, is, if there be wax in the teats, that you can fetch out by drawing them between the fingers.

Again, observe the barren; and if there be a drop hanging at it, which mostly gathers dirt, this is a sure sign she is bulled.

Plow your stubble, and sow vetches or burnet, as soon as the corn is off, for winter-feeding

You may also sow turnips; though they will not be large, yet it will be a great help to make fodder, as their tops will bear some eating

OF HUSBANDRY. 271

eating. And the farmer is to bear in mind, that all winter-crops, whose feed is cheap, are partly clear gain; and turnip-feed will not cost above six-pence or a shilling an acre.

About the last of this month, sow your seed-wheat, as directed in vol. 1. chap. xxviii. in the new diagonal method of husbandry.

S E P T E M B E R.

CONTINUE to get in the harvest, which will be all ready this month.

The first of this month, sow your wheat, as directed in vol. 1. chap. xxviii.

Pull your feed-hemp, and towards the latter end of the month it will be dry, and ready for threshing.

Turn

Turn the rams to your ewes : buy in half-thick sheep, and bullocks, for winter-feeding; turn them into your after-grafs, and when it is eaten, turn them into the turnips.

Provide fence, to pen on the turnips, either nets, sheep-bars, or faggots.

Plow stubbles for winter-fallows; take up or gather the ridges, that the land may lie dry.

Thresh feed-wheat, towards the latter end of the month.

Sow vetches or burnet, for winter-feeding; those that are sown for feeding, must be sown thicker than for a feed-crop.

Sow wheat, rye, and bere; take care to water-furrow and grip the land, to keep it dry.

Wean your foals, and geld them.

Look

OF HUSBANDRY. 273

Look after your bees, straighten the entrance into their hives, and destroy wasps or drones, or they will rob them of their honey. Drones are such as have lost their sting, after which they grow large and idle, and will not find for themselves, but live on the other bees labour.

Put your hogs up, to feed for pork or bacon.

Clean, or open your water-courses. In the North of England, this is compelled to be done by a water-jury, appointed for that purpose, who views all the drains, levies fines, and recovers damages for any that is aggrieved by reason of his neighbour's not scouring his drains, upon proper notice given.

Turn your hogs into the stubbles and woods, to gather acorns.

Throw out musty straw, to make dung.

Lay marl or lime-stone gravel on your grass-land, and let it grow a year or two to the sod, before you plow it; by which it will do the more service to the land, and will last longer. It is by no means proper to marl or gravel broken or fallow land; because the manure sinks; therefore any that falls to the bottom of the furrow, will sink or descend too low for the plow to turn up. When it is laid on grass-land, the first time it is plowed must be very thin; and in fallow, take care that the marl lie at the top of the surface, the last plowing.

O C T O B E R.

SOW wheat, rye, and bere; water-furrow and grip as soon as sown.

Plow stubbles, for winter-fallow; but this must be only done in wet weather, or in such times as wheat-seed-sowing cannot go on; because no time in this must be lost.

Plow

Plow up your potatoes that were set with the plow, and sow the land with wheat or bere.

Begin to splash quickset hedges, and scour the ditch, to lay at the root of the quicks.

Scour or clean all water-courses; to give the water, when it comes, a ready passage.

Continue to sow vetches and burnet, for winter feeding.

Now is the time to take, or drive your bees; but it is better to kill the bees in the hives you intend to take, than to run the hazard of losing two swarms, by driving; which is often the case; for when two swarms are put to the allowance of what honey there is in one hive, that hive not having enough to support them all, they eat what there is, and then perish for want.

276 A NEW SYSTEM

The way to drive them is, to put the mouths of two hives together, and they will go into the upper one.

The way to kill them, is, to make a round hole in the ground, which will fit the mouth of the hive; in this, stick three bits of sticks, about six or eight inches; slit the upper end, in which fix three linen rags, dipped in brimstone, set them on fire, and over them put the mouth of the hive downwards, and stop it close round with sod, so that it will let neither smoke nor bees out; this will effectually kill all the bees.

Prune, and plant all sorts of forest-trees and quicks.

The flax and hemp has, by this time, got a sweat in the mow; begin to break and swingle it out.

The last week in this month, transplant your wheat-plants sown in August or September, as directed in vol. i. chap xxviii.

This

OF HUSBANDRY. 277

This is the time, before too much water comes, to make small surface and pipe-drains; that they may be open, and ready to take off the water when it comes.

The surface drains, or grips, are cut across meadow grass, or corn-land, from every low place, to the ditches, or head-drains. They are made only wide enough for a spade to run at the bottom, to shovel the mold out.

HOW TO MAKE PIPE-DRAINS.

Pipe-drains are particularly useful to drain in lawns or meadows, lying opposite gentlemen's houses, who for beauty's sake, would not have drains seen, and these answer the end of French drains. Pipe-drains are made thus, viz.

Take a sharp spade, run it sloping down ten or twelve inches, then turn your face and spade another way, and cut another nick, sloping down, opposite to the former,

T 3

let

278 A NEW SYSTEM

let the sod at the top be about eight inches broad, and the spade, going thus sloping down both ways, will meet at the bottom, therefore the sod will have a ridge or sharpe angle, of which cut about three inches off; then drop the sod into its own place, by which there will be a tube or passage for water, about three inches triangular, which is sufficient to take any downfal of water off.

The sod, dropping into the same place, forms (as it were) an arch; and if the ground be tolerably firm, when it is made, a horse may tread on the sod, and it will not sink. It is best, to defer turning cattle into the land where such drains are made, for three weeks or a month after, in order that the sod may grow together, and be more solid.

You may cut these drains as near together as you please, or need requires; they are quickly and easily made; and there is no loss of ground, or any offence to the eye. It might be done on a bowling-green, or grass-plat; spread the little triangular sod or
mold

mold you cut off; which will help to freshen the surface.

Streighten the passage for your bees, and take care that no mice or snails come at them; they being great enemies.

Kill wasps and drones, so pernicious to bees, by eating their honey.

This is the time to brew your strong-beer, for keeping for the ensuing summer's drinking.

And here let me advise the Irish farmers, to copy after the English, by brewing good beer or ale, and make that their drink, instead of giving their money to the French for wine and spirits.

No man is to be pitied, that cannot enjoy himself or his friend over a glass of good ale, the produce of his own land, and perhaps his own farm; which, therefore, comes at a cheap rate.

On the other hand, he is very weak, and greatly to be blamed, who is led away by pride, to ape the gentleman of fortune, in treating with such costly liquors, when the produce of his own country suits both his constitution and pocket better.

N O V E M B E R:

NOW is the time to finish plowing your winter and ensuing summer-fallows, whether stubble or lay-land; and then lay by your plows and harrows dry till January.

Put up your hogs, to feed for bacon.

Moss-harrow your lands, either summer-pasture or meadow.

Take up your cattle, and horses, of all sorts; put cows into the house; and bullocks, and other dry cattle, into the barn-yard, to eat straw.

For

For the conveniency of which, make racks to stand on four feet, like sheep racks, seven feet long; this will hold a large arm-ful of straw. To every two beasts have one of these racks, and disperse them about the yard, so as cattle may walk and eat round them.

Turn your sheep into the turnips, and confine them to what they will eat in a week.

Buy in small store-pigs, to turn into the barn yard, to eat the loose corn that falls under the stand-racks; which will pay well by May.

Continue to sow wheat, rye, and bere.

Overflow your meadows.

Bleed your horses and fat cattle of all sorts.

Destroy ant hills.

Move

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Move your bees under shelter, if they be not already in a bee-house.

Plant quicksets, scour your drains, splash quicksets, fell coppices, provide timber for carts and plows.

Fatten your swine for slaughter.

Plant fruit and timber-trees, if the weather be open or clear of frost.

D E C E M B E R.

THIS is one of the farmer's months of rest partly, not having much to do.

When the ground is clear of frost, mow-harrow and roll meadows, or grass-ground of all sorts, that want it.

Look

Look after your fat sheep, and give them a little hay, to clean their mouths from dirt, occasioned by their scooping the turnips out of the ground.

Pick up the turnip-shells with a fork, that the sheep may eat them clean, before a fresh break is made.

Kill your bacon-hogs, and winter's beef.

Take care of your young foals, and, instead of threshed oats, give them fine oat-sheaves, which is better for them.

Turn cattle into your burnet or vetches that were sown for winter-feeding, if it be forward; but it is better to spare it till spring, when herbage is of more value.

Spread foot, or the compound of salt, to kill the red worms, and enrich the land. (See receipt.)

Look

Look after your bees, and feed them, if they want it; feed your pigeons, spread ashes among their dung. Fell coppices, and provide timber for house-boot, cart-boot, and plow-boot.

APPENDIX.

APPENDIX.

CHAP. I.

A HINT, humbly offered to the LEGISLATURE, concerning the Misfortune of inclosing TOWN-FIELDS, and adding Farm to Farm.

A Town-field consists of several hundred acres, perhaps without hedges, ditches, or other fences, to divide one man's land from another; tho' a hundred farmers may have land in the said field, yet none will have, perhaps, above one, two, or three ridges lying together in one place, but alternately mixed or interspersed thro' the field; inso-much that a farmer (in many places) has no way to know his own ridges, but by cutting the first letter of his name, or some figure, in a bit of grafs, at the end of his ridge; and in order that one should not encroach on, or steal from another with the plow, they

286 A NEW SYSTEM

they measure the breadth; as every man's ridge is of the same size, or width, whether they be rood, half-acre, or acre-ridges; they being generally laid down with some proportion of measurement.

The reason why they were thus laid out, and intermingled in small parcels, was, that each person should have his chance of good or bad land; as it might vary in one of those large fields; therefore an equality was very necessary, in dividing the lands of England, when it was first peopled; and happy it has been for her inhabitants, that it has continued so long.

Most towns have five of these fields; of which one will be fallow, another wheat, another barley, another beans, or pease, and another oats. Every year, the farmers take care never to sow one sort of grain twice together in the same field; keeping alternately changing; so that one is a preparative for another; and each field gets its regular fallow every five years; and thus they are kept in tillage from generation to generation.

Each

Each farmer is obliged to concur with his neighbour in this regular course of tillage, particularly in the fallow and winter-crop; as the fallow-field is common for the cattle, all the fallow-year, on which a great many sheep are kept, that, I may say, weed the fallows; for they pick up scutch-grass and other wild roots, every time it is plowed. Likewise, the wheat-field is fenced in at Michaelmas: whereas the fields that are to be sown with spring-corn, may be kept open till April.

A farmer may substitute, in the place of any crop, one of his own chusing; provided it stand on the ground no longer than his neighbours; as they keep a regular time of laying their fields common to the cattle, and fencing them in, when each crop is sown.

There are some towns that may have only three or four of these fields; if this be the case, they fallow the oftner, and are

are confined to fewer sorts of crops ; but of late years, they have found a good method of sowing turnips in the fallow-year ; in this case they begin to plow the stubble under, as soon as harvest is in, and keep plowing, for a winter-fallow, till Midsummer following ; then sow turnips, and eat them off by April ; then sow barley ; after barley, beans or pease ; after these, wheat ; after wheat, oats ; and again begin with turnips ; thus they get a valuable crop and fallow the same year. This is a great improvement in husbandry, to such towns as have adopted it ; but I find this is far from being so general as it ought to be in England.

My Irish, and indeed some of my English readers, may think it a sort of a hardship for these farmers, to have such small parcels of land, thus intermixed, and not at liberty (altogether) to occupy or inclose them as they please : nay, in short, some of the farmers who hold the said field-lands, are so much dissatisfied with their lot, that
they

they have applied for, and obtained acts of parliament, to inclose their said fields (which will, in the end, have a bad effect); for I see this in quite another light, and should consider it rather as a misfortune, were all the town fields in England inclosed; for, if we consider tillage in its most truly deserved light, we shall find those in the countries where it most flourishes to be the most rich, happy, and independent people.

In short, a corn-country gives bread for people of all denominations around it, and work and bread enough for all the poor within it; it is from these open-field-countries in England where most of the corn is raised, that London, and other great and foreign markets, are supplied.

But were those fields inclosed instead of corn, the land would be ingrossed by rich farmers, and turned into grass; then consequently corn would be scarce and dear, and

the poor would want both bread and work. I know this to be already the consequence, where some fields have been inclosed of late years.

If the said lands be kept for tillage, it is plain they are in a better state than if inclosed in small fields; as corn never grows better than in an open exposure; not to speak of the loss of ground taken up in the ditches, &c. But whilst the land is kept in the open town-fields, the farmers are obliged to keep them in a regular course or succession of tillage.

Again, let me remark, that these open town-fields are a great spur to improvement in husbandry.

How often have I heard farmers make their remarks, in passing the ends of perhaps two or three hundred ridges of corn belonging to as many people, and say, John, such-a-one's corn is good; he has a good
plowman,

plowman, and has managed well; when perhaps the next ridge belongs to a worse manager; therefore they immediately censure him thus: Thomas has managed bad; his plowman is bad; or he has not sown it right, or rolled, or weeded; or wherever the fault is, it is sure to be found out, and condemned by the sharp eyed neighbours, and the owner shamed into a better management; so that, in short, it fires every one with an emulation to out-do each other, and even extends itself to the very servants.

With what pleasure have I beheld two or three hundred teams, plowing in a field, every one striving to shew the best work after him! How often do they make wagers (of perhaps a few quarts of ale, or the like) which is the best plowed ridge; their masters to be the judges?

Thus they strive to excel each other, in every branch of agriculture; as, who keeps their teams in best order, and best geared;

who sows best, so that the corn comes up evenest after them; who mows best, by leaving the stubble even-cut, &c. who makes handsomest sheaves; who makes handsomest flocks, or has the fewest sheaves blown down after a high wind; who makes the handsomest loads of corn upon a waggon; for if a load falls from the waggon, before it arrives home, the loader forfeits something at the harvest supper; also, if a driver overturns a waggon, he forfeits a goose at the harvest supper.

Again, if a farmer (more curious than common) introduces a strange crop on one of the ridges, in this town-field, there is immediately a jury of farmers over it; and if in the end it proves of utility, it becomes general, as their lands are all alike, not so much as a hedge or ditch to part them.

In short, I know not whether these town-fields may not tend to kindle a spirit of improvement equal to a premium, since
there

there may be the same ambition of excelling in one as another, as well in the little as the great world; so that, I believe, these town-fields are the greatest spur to improvement of any that could be invented, which every judicious observer must admit. For my part, I should think it a blessing to Ireland, if all, or most of the land in it were divided in these town-fields, as it would certainly put a stop to those monopolizers of land. What a pity it is, that some method is not found out to prevent so growing an evil! I knew six graziers, one of which (who, indeed, is lately dead) farmed upwards of 12000 acres; most of it, since his death, let from 20s. to 25s. per acre; and the other five graziers were computed to hold from 25 to 30000 acres, worth at least as many pounds or guineas a year.

This is the country in which the White-boys have been so outrageously daring and mischievous of late years; and, indeed, it is not much to be wondered at, for these in-

grossers of land are starving them out of the country.

I know the country very well, and am acquainted with all, or most of the graziers in it; and from discourses I have had with them, found that they were all sensible of the bad consequences attending so much land being in the hands of a few men: but no one can be blamed for doing the best he can for himself and family, since he is not transgressing the law; for, says one, such a farm is to be lett, and, if I can get it worth the money, I may as well have it as another; for if I do not take it, another will. And, on the other hand, the landlord cares not to whom he lets his land, provided it be to the highest penny, and the surest tenant. This is all natural on both sides; self-interest is the first law of nature; and the weakest must go to the wall, as the phrase is; but be assured the end will be fatal; and it is coming very fast. In the course of my time, I have seen the growing evil as plain as I see the paper before me: but

but were we secure from invaders, and could we make our bullocks defend our islands (when dispeopled of all but their masters) with their horns, from all enemies, yet it would be true policy to keep our country as well peopled as we could, as a kingdom's riches consist in the multitude of its people; for bullock cannot eat bullock, neither does meat eat well without bread. These are consequences that ought to draw our attention, were we divested of all humane tenderness for our fellow-creatures.

However, I would not be understood to condemn the graziers of unnatural inhumanity, or hardness of heart towards the poor; no, that would be doing them great injustice. I know a great many that have helped to ruin their country, by holding great tracts of ground, whom, yet I believe to be as good as the generality of men. It is none of their fault, the evil grows upon them insensibly; it is as natural for a grazier to lay farm to farm, as his capital increases, as it is for a merchant to add ship to ship,

trade to trade, wealth to wealth, till it amounts to what is called a plumb, which is an hundred thousand pounds. In short, it is nearly alike, though the consequence is different; for the merchant is enriching his king, country, and self, at the same time; but the grazier, to enrich himself, both weakens, and impoverishes his country, by transforming the human species into brute beasts as it were.

Again, it puts a final stop to improvement. Because a gentleman-grazier holds so much land in his hands, he finds himself business enough to manage it by stock, without being at the trouble to till or plow his heathy, lingy, barren land. Suppose a grazier holds under stock four thousand acres; he need keep no more than four families, as herdsmen and shepherds; suppose five persons in each, is only twenty in all.

But if the said four thousand acres were under tillage, and occupied by farmers at
one

one hundred acres each, it would keep forty families well, at five in each, which would make two hundred people; therefore the difference is, as two hundred is to twenty.

The above are the troubles that Ireland at present labours under, and which have been, to my knowledge, growing upon her these twenty years last past. And I am afraid the contagion has reached to South and North-Britain; for there I see the farmers are adding farm to farm, and turning graziers, so consequently neglecting to raise the staff of life; which is one reason that the kingdoms are so thin of grain, and the poor so distressed for work and bread, particularly in the most grassy countries.

Then ought not England to take the alarm, and enact a law to put a stop to the growing evil, by limiting the size of farms to at most four hundred acres? Such a limitation would prove a greater spur to improvement, than when a farmer has more than he can well manage.

The

The legislature, instead of putting a stop, is adding to the evil, by consenting to so many acts of parliament, for inclosing open town-fields, and omitting to make such laws as would give redress to his Majesty's poor subjects. I often wonder how it is possible for the legislature to overlook so many wholesome laws as might be made; but it is in this, as in most other cases; what is every body's business, is no body's business.

And on the other hand, the high stations and fortunes of these gentlemen, place them above the general knowledge of grievances: their knowledge is mostly from the precarious information of some favourites, perhaps, who generally tell a plausible tale, as they would have it to pass.

It is a pity that a gentleman, before he takes a seat in the house of commons, does not take a tour through his majesty's dominions, and make himself well acquainted with the constitution of her commerce, and grievances of her people.

It

OF HUSBANDRY. 299

It is natural for a master or employer, through all the stages of life, to be acquainted with the abilities of those he employs, and whether or not they be qualified for the trust he confides in them. Then certainly, this, which is one of the most important points, a point on which the happiness or misery of so many people depends, ought to be attended to with the most judicious inspection.

Those who are placed in this station, ought to be every thing that is great and good. To be a good commoner, one must be honest hearted, a lover of his king and country; he should not be a stranger to his own country, as is too often the case with gentlemen that travel abroad, who, being asked about the constitution or commerce of their native country, can scarce give a rational answer; therefore, to be well acquainted at home, he ought to travel three or four years through his Majesty's dominions.

He

He may think this is more than needs ; but, I assure him, it is not ; for I have been travelling in them these thirty years ; and yet I can find something new, that would be worth a commoner's attention.

Added to all this, he should have the patience of Job, to hear all debates ; the wisdom of Solomon, to judge of them ; and the resolution of St. Paul, to plead in their behalf, and dare to be honest, in the worst of times, to his king and country : neither should he be too proud, and distant to his constituents, but condescend sometimes to keep them company, and hear their advice ; and let him be assured, that he will hear as sound mother-wit under a plain, as a laced coat, though perhaps not spoke with such eloquence of speech.

C H A P.

CHAP. II.

A few HINTS, humbly offered for the perusal of the LEGISLATURE, relating to a Dog-Act, &c.

THOUGH I am no great politician, yet I wish so well to the constitution of England, that, so far as I am capacitated, I would most willingly lend a hand, to point out any laws that might be of utility to its inhabitants.

And what more particularly encourages me to undertake the task, is, because the country from whence my work takes its birth (I mean Yorkshire) happens to be represented by worthy, spirited, independent gentlemen, who have the interest of their country at heart, and have also abilities and industry enough, to stir up and enforce any scheme, that may appear to be for their country's good.

I there-

I therefore flatter myself, that they will undertake the procuring of so many of these acts, as may be thought worthy their notice. And I farther flatter myself, that such of my readers as are impartial, will think with me, that a dog-act would be of great utility to the public; especially after they have been told the immense sums it would save to the industrious part of mankind, and also the great revenue it would raise to the public funds, out of the pockets of none but such as could well spare it; as any one who found himself oppressed, could ease himself by parting with the cause thereof.

Secondly, it would lop off a great many useless animals; and such as are of benefit would be preserved, for their merit, and the owner's interest. Neither ought a poor man to keep a dog, if he be not well able; it is inhuman, to keep any dumb animal to starve, which many must, did they not eat the poor children's bread and butter, or turn out to worry sheep.

It

It is always allowed, that what will keep a dog, will keep a pig; and I think I need not say which would be found the most profitable to the poor man's family, at Christmas, a dog for his children to play with, or bacon to fill their bellies.

I may be asked, why, cannot a poor man see these follies himself? I answer, no; because fore-cast does not always get the better of folly in this, no more than in every other degree in life; there is a natural tenderness and indulgence, in every parent towards their children, as well as in ladies for their lap-dogs; pardon the comparison.

Thirdly, it will appear, that there will be, yearly, at least a million of money saved, that will center among the poorest sort of individuals; and also 250,000l. which will go to the public funds, out of the pockets of the abler sort.

In

In order to reduce this to some sort of certainty, it may not be amiss to make a computation, how many dogs may be in England, and (upon such an act passing) how many useful ones may be kept to pay tax, and how many of the reverse, destroyed for a saving. This cannot be done better, than by first making a computation, how many people are supposed to be in England.

In this, authors differ in opinion, as much as from eight to twelve.

Some writers compute eight, some nine, some ten, some eleven, and some twelve millions; but, if we may judge from appearances, and if there were nine millions a century ago, I apprehend there cannot be less than eleven now.

There is nothing that can give a better idea of the increase of people, than the multiplying of new houses; neither is there any
one

one object that attracts the eye of a traveller, or dwells upon his memory more, owing, perhaps, both to the largeness of the object, and to the taste of building in the present times.

Few men have travelled in England more than I have done, and I have made my remarks very minutely, upon the looking over of which, and comparing my journal with all the observations and computations I can make, I am clearly of opinion that there is daily a great increase of people.

This may occur to any one who lives in any part of the kingdom; if he only takes notice of the many new houses that are daily building in every town and city, together with all the farm houses and gentlemen's seats, that are starting up in the middle of every new inclosure, that are very rapidly going on in all parts of England.

Neither are there any houses that stand long empty; being immediately tenanted.

Were not this the case, architects, or proprietors, would soon stop building; but it is the great demand, that makes them push forward the work with spirit.

All this shews, that, tho' a great number of people daily go abroad, yet we are greatly increasing in number. But, in order to come as near to the truth as possible, I will strike a medium, and suppose England and Wales to contain ten millions of souls.

Some will compute five, and some four people in a family; but, to avoid fractions, we will allow five people to a family.

This makes two millions of families; and I think we may justly compute one dog to each family; as there are more families that have two or three dogs in them, than what are without; not to speak of gentlemen that
keep

keep hounds, who have, perhaps, more dogs than people.

Therefore, I say, we may, almost with certainty, set down at least two millions of dogs in England.

The next question is, what each dog will take, in a year, to maintain him; which I think we may justly set down twenty shillings; for if a gentleman sends a whelp into the country, to be reared, he never pays less than half a guinea or fifteen shillings, till he be half a year or three quarters old, and sometimes a guinea; except he send him to a tenant who is under an obligation to him, in this case he pays perhaps nothing, but then the consumption is no less, for the dog eats the same as if paid for.

As to gentlemen's hounds, grey-hounds, pointers, and my lady's lap-dogs, they cost a great deal more.

We will suppose pug only to destroy one pound of meat in the day, reckoning bread and butter, tea, roast-beef, or what is stirring, and call that only three-pence, though ready dressed, and without bone, (because it would be very imprudent to give poor pug bones, to break his teeth.) Now three-pence per day, will be found to amount to four pounds eleven shillings and three-pence a year.

This, to be sure, is nothing in a lady's pocket; no more is dirting or wearing her aprons, &c. any great matter, because she can mend them herself; which shews good housewifery.

But, though such things be not felt by people in affluence of fortune, yet be assured it hurts the public in general.

The greater the consumption is, the higher is the price in the articles thereof; and a half-penny, or a farthing in a pound, in
either

OF HUSBANDRY. 309

either meat or bread, is very sensibly felt by the lower sort of people.

If two millions of dogs consume annually, twenty shillings each, the sum amounts to two millions of money. Suppose an act of parliament to pass, that each dog should pay five shillings yearly, the sum would amount to five hundred thousand pounds a year.

But, upon such an act's taking place, we will suppose all the useless dogs destroyed, and tax paid only for shepherds dogs, farmers house-dogs, and gentlemens dogs, which might perhaps reduce the number to one half, that is, one to every two families, then the sum raised, would be yearly, two hundred and fifty thousand pounds, to go into the public funds, which would all come from the pockets of such as would be well able to pay it; and, as I observed before, if any one found himself oppressed by the tax, he could quickly ease himself, by dispatching the dog.

The said million of useless animals, that would be put away, reckoning each to destroy twenty shillings worth of victuals every year, this would be a saving to the nation of one million of money, and this two from those of the poorest sort.

Though these calculations are only guess-work, yet the probability is so great on their side, that it almost amounts to a certainty.

Perhaps some of my readers may imagine, that I have some interest in writing upon this subject; but I will assure them I have not, so far from it, that were such an act to take place, I should, in all probability, pay for two or three dogs, being very fond of those animals, so far as they are useful; but I have no notion of keeping a parcel of yelping curs for no other use than to eat the poor's bread, bite horses' heels, worry sheep, run mad, &c. And since we cannot defend ourselves, and rest securely at home, without a respectable standing army, and since that army cannot
be

be raised nor paid without money, and money cannot be raised without taxes, let them be levied upon such superfluous articles, as reason clearly shews is most for the public good.

Was this act to pass, and each dog to pay five shillings a year, there is no doubt but this would raise a fund of at least two hundred and fifty thousand pounds a year, which though very considerable, is nothing in comparison of the great saving, which could not be less than one million of pounds sterling per annum. Any saving plan, enforced by an act of parliament, is indisputably as beneficial to the public, and reflects as much honour upon the member that promotes it, as one that brings in money to the public funds: and such a dog-act would be found to do both.

C H A P. III.

Shewing how advantageous it would be to the P U B L I C, was an Act passed for one standard of W E I G H T S and M E A S U R E S to be observed through the Kingdom.

ON E would think, that an act for one standard of weights and measures through the kingdom, is of such a tendency, and speaks so plain for itself, that it could meet with no opposition ; and that, let who would carry in a bill, it must pass the house nem. con. and yet a thing of this sort has been moved for, and rejected, which must surprise every well meaning man.

Any one that speaks against this act, I should suspect of some foul play, in preying upon either buyer or seller, or perhaps both. Having acquired the knowledge and art of traffic between one county and another,
where

OF HUSBANDRY. 313

where weight and measure vary; this enables him, by a prevaricating artful cunning, to deceive the public, whilst he vows and protests that the commodity cost him so much, and therefore he must have so much. This is a thing easily done, as for instance :

A bushel of corn, in some parts of Cheshire and Lancashire, contains from thirty-eight to forty-two quarts; whereas in other parts it is Winchester measure only, so that the difference in measure must leave a great profit to the dealer.

Butter is another article that varies much in weight, even in the same market. As none can bring less than sixteen ounces to a pound, so none ought to bring more; though some bring twenty or twenty-two, but in this they are as unfair and designing, as those that bring less, because they sell not only accordingly, but sometimes higher in proportion.

Such

Such dealings lead people astray, in forming a judgment how things sell, and make the market always uncertain. Some people must be imposed upon; for it is natural for a seller to say, such a one sold for so much, and therefore I will have so much; though perhaps there is one fourth or fifth of the money difference in the weight or measure.

In short, the thing is so glaring a misfortune throughout the kingdom, that I wish an act was passed for one standard of weight and measure through England and Wales; and he that sells more, should be equally culpable with him that sells less.

CHAP. IV.

On an Act for a general Use of Broad-Wheel'd Waggon's, Two to roll within Two.

WHATEVER my farming readers may think of my scheme, in promoting the foregoing acts, I am sure I shall meet with the disapprobation of a great many of them in this.

Some sensible men perhaps here and there, may see the thing in its true light; but I doubt they are thin strewed, for I know the major part will be my enemies in it.

However, be this as it will, I am so sanguine in my expectations, that I shall push it on with all the interest I have; and for my pains, I hope to have the pleasure of travelling

travelling in far better roads than ever was known heretofore.

My opponents, perhaps, may be as blind in this affair, as they were formerly, when turnpikes were first introduced; but it is possible to force them into their own interest against their wills.

As the law now stands, the usefulness of broad-wheel'd waggons is certainly indisputable, but it is only half doing the work; their utility so far, may give us an idea what might be expected from a general use of them; but, as the thing stands, it is just like setting two horses to pull contrary ways, though both want to have the load to the same place; because the narrow wheeled carriages cut the road in such a form, that in some places it is almost impossible for broad wheels to pass in it.

At first, when the act passed for broad-wheel'd carriages, it was thought too oppressive to oblige the farmers all at once, to
come

come into it by a general act, as the expence was looked upon to be too great for many to bear; but now the case is altered, for a great many of the most sensible sort of them have come into it of themselves, and some upon easy terms too, by making their former waggons or carts do, without any other alteration, than adding a set of fellies at each side of their former wheels, with bolts to go through the three fellies, to bind them together.

The two additional fellies being each three inches broad, and the old felley three inches, all completes the wheel at nine inches. This is a very good way, and very often practised now-a-days, particularly when farmers want to go into their grounds, then they make broad wheels, to prevent cutting the sod; some have them put on and taken off occasionally.

Now, since the most sensible farmers are creeping into this method, and still would more, were they not prevented by bigotted silly fellows, persisting in drawing narrow-wheeled

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wheeled carriages; which cuts up the road, and makes it impossible for a broad-wheeled carriage to go thereon.

As nature has not given every man talents alike; and as it is hard for the industrious sensible man to suffer through his neighbour's folly and ignorance; it is no more than right, for the legislature, to enforce an act, to bring such stupidity into reason, for their own and the public good.

Should any spirited member take this in hand, it would be well done, to draw up a bill, for every sort of four-wheeled carriages to roll two within two. The act to run thus :

That every waggon and cart-wheel should be nine inches broad; that the fore-wheels of the waggon should roll four feet nine inches wide within the rim or felly; and the hind-wheels roll four feet six inches wide from outside to outside of the rim.

This

This would level the road eighteen inches at each side ; and the little ridge of three inches would be of no hurt, as its narrowness would not permit it to stand high, or resist the wheel of any carriage pressing it down, so that the roads would be all like a bowling green for levelness. The more carriages of this sort that would come upon any road, the better it would be.

The wheels of all coaches, post-chaises, &c. should be four inches broad, and roll two within two, leaving an inch space between the rollers. Upon these conditions, every carriage to draw with as many horses as they please.

This would put an end to all informations, weighings, and such like troublesome business, which are the cause of much quirkings, prevaricating, and perjury.

In this case, every cross country road must be good, because every machine would act as a roller to mend them. The very horses
feeting

feeting, when broke into the surface, would be closed and levelled again, by the rollers immediately following.

I wish every one had the same trials, and could see it in the same light that I do, we should then have good roads, through every part of the kingdom, without any other expence; than that of a drain at each side, to take away the water.

The foregoing chapters relating to the said acts, are, I apprehend, of great moment to the public; therefore I humbly hope they will be perused by the legislature, and do not despair of seeing them pass into the several laws, with such alterations or deductions as the legislature may think proper, for the public welfare.

C H A P. V.

Some Remarks upon the GAME-LAWS,
and the great Advantages that would arise
were GAME made a private Property.

THE game-laws, as they now stand, are replete with many absurdities. They are made inlets to perjury, idleness, drunkenness, and thievery. Neither do they answer the end, for which they were enacted, of preserving the game. In short, they have the contrary effect: for, so long as game sells so much higher than other provisions, so long will a poacher think it worth his while to lose his rest at night, and run all hazards to come at them.

On the other hand, were game made a private property, it would shortly become as plentiful as barn-door fowl.

What I mean by private property, is that every one, who either rents or holds any
VOL. III. Y quantity

quantity of land in his own hands, should be intitled to all the game which he could take or keep thereon; such to be as much his own property, as his tame stock, and also to be subject to the same laws of felony, if stolen.

This would put a final stop to poaching, as it would be every land-holder's interest to watch his wild, as well as his tame stock.

It would also be his interest to feed, cherish, and use them mildly, in order to keep them upon his lands; as by shooting, hunting, and the like rough usage, he would frighten or chase them from his own, to his neighbour's land, and by that means lose his property. For they would naturally remain the longest where they would be the least disturbed.

And it would be in this, as in all other cases; when a man wants to raise a stock, he cherishes the breed, till it multiplies so far as to answer his purpose. And as wild-fowl

fowl feed upon worms, seeds, ants, and the like, they would be kept at a trifling or no expence; consequently the land-holder's interest would be, to incourage and raise as many as he could. Neither would he suffer his property to be invaded by any unlawful means; as the law would secure to him this stock, as well as any other of his goods or chattles:

Though this law would secure the property to the tenant, yet it should not deprive the landlord of his pleasure; for he should have full power to hunt and shoot at all proper seasons of the year, as in the present case. Suppose the preamble of an act of parliament was to run nearly to the following words:

Whereas it has been found by experience, that the game-laws, as they now stand, are attended with many inconveniences, and also do not answer the end proposed, in preserving game; therefore, be it enacted, &c. that all such laws which are now in force be made null and void, &c. and be it enacted,

Y 2

that

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that from and after the —— day of ——
1772, all the said game-laws are repealed,
made void, and of no effect.

And be it farther enacted, that, from and
after the —— day of —— 1772, game,
such as hares, partridges, wild ducks, phea-
sants, &c. shall become the private property
of each land-holder, so long as it remains
on his ground. That it shall be lawful to
take, kill, and dispose of it, as he thinks
proper; as in cases of his other goods and
chattles; and it shall also be secured to him
from theft or other trespasses, by the same
laws which secure his other property.

Nevertheless, it shall be lawful for the
landlord, at all seasonable times of the
year, &c. (here to mention at what times)
to hawk, hunt, shoot, kill, and take away
such sorts of game, as are particularly spe-
cified in the act.

That it shall be lawful for every sports-
man, land-holder, &c. to pursue a hare with
hounds,

hounds, or grey hounds, &c. to her death, let it happen upon whose premises it may.

Be it farther enacted, that it shall be lawful, if one shoot, and that the game fall upon his neighbour's ground, to go and take it up, but not to follow the game so as to shoot, or by any other means to kill game upon his neighbour's premises, &c.

I cannot tell what my reader may think of such an act; but I am of opinion, that were it to take place, we should have wild fowl as plentiful as tame; because by nature they feed upon what is of no use to tame fowl; therefore it would be the farmer's interest to encourage their breed, by all the gentle methods he could use; which in time would make them tame and tractable.

Neither would a landlord ever be at a loss for a days diversion, the game would become so plentiful.

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In short, were this act to take place, I should not wonder to see cottagers, who hold perhaps no more than three or four acres of land, have pheasants and partridges come about their doors like chickens, by gentle usage.

CHAP. VI.

Upon limiting the Size of FARMS.

IF an act of Parliament were to pass, in order to put a stop to the monopolizing of land, and to limit the largest farms to four hundred acres each, it would doubtless have a great tendency towards making improvements flourish, and plenty abound throughout the kingdom.

It would then be in the power of every one, to make the most of his ground; no corner of it could escape his eye, and lie barren. He would improve every part, and fill it with one profitable crop or other.

It

It is the nature of man in all stations of life, to be aspiring, and very often to grasp at what he is not well able to manage.

But in no case is the misfortune more sensibly felt, both by the party concerned, and by the public in general, than when a farmer holds too much land.

But suppose the farmer can struggle through, and pay the rent; yet the public is still a loser; as the earth does not produce half the increase she would do, were she managed to the height of perfection.

It is such laws as these, which would lay the foundation for plenty; and only such that can make the people happy and honest.

May we not compare a kingdom to a family? Is it not the first care of a master, to provide bread for his family? If he neglect this, can he expect that his servants will be honest and industrious?

Is not the king, and the legislature the fathers of the people? Are they not empowered to enact such laws as may appear to them to be most for the public good? Is there any that ought to draw their attention, before such as would satisfy the first law of nature? Hunger will break through stone walls.

Wherein is the good of all the laws which ever have been enacted, to prevent forestalling? Do they satisfy the people's craving appetite with bread; or make it one jot cheaper? Do they add one peck of corn to the mill, or tend towards making one blade of corn more to grow,

It is inconsistent with reason they should. In short, were these laws put in force, they would have the contrary effect; because they would cramp trade, which, like water, is the best leveller.

What would London and all our great sea-ports do, were it not for the corn-factors,
wholesale

wholesale butchers, drovers or dealers in cattle, &c? It is such as these that keep an equality in prices throughout the kingdom. They buy where such commodities are low, and sell where they are high. Is it to be supposed that a farmer or grazier, who has perhaps no more than twenty quarters of corn, or three or four fat cattle to sell, and who lives a hundred miles from London, could go there to sell them? And suppose he did, must he not lay a greater price upon them, to answer such extraordinary expences? And would not this most sensibly effect the lower class of people?

A merchant who deals largely in any such commodities, certainly can afford to sell lower in price, than he who must be at the same expence in attending the markets with a trifle.

The merchant's warehouse may justly be called a magazine for the poor, where they can apply for such necessaries as they stand in need of. Neither have the poor cash or
means

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means to provide long before such things are wanted.

It is the merchant's interest to lay in his commodities in the time of plenty, and to sell out in time of scarcity. Is not this a natural policy, that will keep things most upon an equality? Was not this the case with Joseph? He filled his stores in the time of plenty, and sold when they grew scarce, for he did not give, any more than our merchants do.

Most of the commodities necessary for life are perishable, therefore under a necessity of being disposed of before they spoil. Should any one be so silly or indiscreet, as to keep them too long, he is punished by his own folly; but this very seldom happens:

The merchant with a capital, and warehouse proper for the occasion, is a ready market for the farmer to fly to, for the sale of his crops. Had he not such a resource,
he

he would be deterred from sowing, which would be the first step towards a famine.

These are all consequences which must naturally happen, were the acts to prevent forestalling put in force. For every person that buys before the goods are brought to market, is in reality a forestaller.

I remember reading many hints in the news-papers, relating to fat cattle being returned from the markets in London to the country, unfold ; and at the same time wishing for such laws as would enforce them to be fold, and not returned.

Certainly such authors judge as superficially of those matters, as the old-fashioned farmer, who, for a year or two past, has stuffed the papers with his silly arguments, wherein he takes upon himself to prove to the public, that it was the inclosing of commons, together with turnip-husbandry, which was the cause of the dearness of provisions.

In

In one of his letters, about Martinmas, he thanked providence for a miss crop of turnips. For, says he, as this crop has failed, farmers are obliged to bring their sheep and cattle to market; which has lowered butchers greatly. But, perhaps, he is one of the tribe of sleepers, which only want food one half of the year; the other they live in a state of insensibility without it. His short-sighted understanding could not find out what would be the consequence; that the more they killed in autumn, the fewer remained for slaughter in the spring; that we cannot both eat our cake, and have it, (as the phrase is.)

That when winter-food falls short, (of which turnips are the best) the cattle must walk to the market with their bones half loaded with flesh; consequently the poor must go with half a belly full.

The old fashioned farmer's reasoning upon the inclosing of commons, is much the same, for he does not see the many thousand acres in the kingdom, which in their wild state will

OF HUSBANDRY. 333

will not keep a rabbit on an acre; whereas, if inclosed and improved, they might be made to keep four or five sheep per acre. And certainly the more live stock there is bred in the kingdom, the greater chance we have for plenty; because in the end, they must come to the butcher, except turnips and other winter food fail. Then, indeed, the cattle may die for want, and the poor may sew up their mouths.

It is past a contradiction, that the more waste barren lands there is inclosed, and improved, the more stock and corn it will raise. All which tends to plenty; because every article that keeps nature alive, springs from the earth; consequently it ought to be our first care to make her produce abundance.

But to return to the farmers, Salemen, and butchers; (these are represented as unmerciful men by authors in the news-papers, who want some laws to make them kill the cattle when brought to market, whether it can be consumed or not). I humbly conceive

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ceive such laws would be very pernicious, and put a stop to the balance of trade, which, instead of going on smooth and even, would be continually upon a flux and reflux. It would be like a weigh-pole, which children ride upon, always up and down, rising and falling; because some weeks there would be twice as much cattle in the market as is necessary for the inhabitants to consume; therefore the meat would be sold very low, or thrown away, and perhaps both.

The next market-day, there might not be half the quantity of cattle as was wanted, consequently the meat would be double the price. In this case the rich could buy, but the poor might starve.

Experience shews to the butchers, not only in London, but all over England, how much meat each market will take off.

Each one knows what he killed last week, which was perhaps as much, or more than
he

he could sell; therefore he will kill no more this week, lest it should lie on his hands.

Before such laws should take place, it would be necessary that the farmers should be indued with the spirit of prophecy or foreknowledge; that he in the north might know on what day he in the south, at several hundred miles distance, would send his cattle to the market, lest they should clash with each other, and over stock it.

In short, I am of opinion, that it is as necessary to send cattle out of the market, when over-stocked, as to bring them to it when scarce; consequently, the drawing-farms near London are very useful, and may be considered as a sort of make-weight, ready to throw into the rising scale, as it were, to keep a balance.

There is another set of people, who exclaim against farmers for withholding their cattle from the market; as if that contributed to the dearness of provisions.

But

But these notions, like the rest, are ill-grounded. Every one that judges of things rightly, must know, that it is not the husbandman's interest to keep back from market his cattle, after they are once fat; for when they come to the height of perfection, all the food they eat is thrown away; and the interest of the money is sinking. It is the interest of every one in trade, to make as quick a return, as possible; therefore it is plain that it is the graziers interest to send his cattle to market as soon as they are fat.

And on the other hand, the public can lose nothing by the cattle being kept away from market, till they are fat; because every pound they gain in weight, is adding to the public fund of plenty; the more pounds a bullock gains in weight, whilst he stays from the market, the more bellies he will fill, when he arrives.

Upon the whole, it is bad policy to cramp trade in any branch, much more in that which concerns the cravings of nature.

The

The most prudent step would be, to lay a foundation for plenty, and there is no doubt but that nature will produce enough to satisfy her dependents. As to things being dear, it is a natural cause, which arises from money being more plentiful, and from an increase of inhabitants; and not from any real want, or decrease of provisions.

It is not improbable but that in process of time, wheat may rise to five shillings a peck, by gradual steps, for the same reason as it has rose from one-penny to sixteen-pence a peck; and every other commodity in proportion.

CHAP. VII.

Some general Remarks upon the foregoing
CHAPTERS.

IF my reader please to cast his eye over the following short sentences, collected from the foregoing proposed acts, he at one view, may perceive the great advantages that would accrue, were they enacted and put in force.

Query. Is not four hundred acres of bad land as much as any man can manage well, so as to bring it to the height of perfection?

Would not four hundred acres well managed, bring as much produce to the market, as six hundred of the same quality badly managed?

If so, is it not bad policy to allow a man perhaps six thousand acres? Is not this starving the people, by keeping a great part of the country barren or unimproved?

Query. Would not a dog-act also add towards plenty, as many useless animals would be lopped off, which are now helping to starve the poor?

Would not this act also enrich the treasury, from the pockets of such only as could well spare the cash; as those who found themselves unable to pay the tax, could, without any real loss, ease themselves of the burden, by putting away the animal?

Query.

Query. Would not a game act likewise, in some measure help towards plenty; as the wild fowl chiefly feed upon such food as would be lost to the tame fowl; and the more of the former that would come to the market, the fewer of the latter we should want?

Query. Would not a general act for inclosing all waste lands or forests, be of great utility to the public, and assist greatly in bringing plenty to the market? Because much land in the kingdom, in its present wild state, will upon one acre scarce keep a rabbit of five pounds weight; and yet it might be so improved, as to keep an ox of four hundred; therefore the advantage to the public would be as five to four hundred.

N. B. Though I am against inclosing open town-fields, for the reasons given in the chapter upon that subject; and also because they are at the height of improvement; yet I am pretty confident, that acts for inclosing commons are some of the best that can be enacted.

Query. Would not an act for one standard of weights and measures be a public good? Would it not put a stop to many abuses which are committed by the designing, cunning man; and put the plain, honest, illiterate man (who does not understand the difference of calculations between one country and another) upon a footing with such?

Query. Would not a general act for broad wheeled waggons, to roll two within two, save much labour and expence in mending the roads; as, instead of breaking them up, they would, like a roller, close, smooth, and mend them? And would it not be much pleasanter for all denominations of people to travel upon such?

Query. Would it not be a great satisfaction to the king and legislature, as well as to the public in general, to know how many people there are in England; both Romans and Protestants? As also how many acres of tilled and grass land it contains, separately; and likewise what number of dogs we have?

Might

OF HUSBANDRY. 341

Might not all this be attained in a month's time at most, and without any public expence, by issuing out orders to the church-wardens in each parish, to take the numbers of all within it? And this might be done in three days, in the largest parish in England; provided the following table was put in the news-papers, as a precedent for them to go by.

The Names of each Fa- mily in the Parish of—	Number of Pro- testants.	Number of Ro- mans.	Number of tilled Acres.	Num. of Acres of Grass-land.	Number of A- cres in all.	Number of Dogs.	Yearly Rent of each Farm.
							£. s.
John Simple	9	2	231	355	586	3	253:10
Sir Th. Bart.	15	3	260	621	881	51	432:5
Francis, Esq;	12	0	25	67	92	15	72:2
William	6	0	000	000	000	2	2:5
Rev. Mr.	10	0	20	55	75	5	32:3
Lord	0	32	101	232	333	54	163:9
Earl of	36	3	54	225	279	48	113:2
John	5	0	5	6	11	3	94:5 7:8
	93	40	696	1161	2177	181	1170:8

F I N I S . |

